

Message

From: Don't Waste Arizona [dwaz@fastq.com]
Sent: 1/6/2017 7:39:02 PM
To: Strauss, Alexis [Strauss.Alexis@epa.gov]; Mccarthy, Gina [McCarthy.Gina@epa.gov]
Subject: copy of complaint filed in EPCRA citizen suit
Attachments: Hickmans EPCRA complaint 1.0 - Complaint(1).pdf

Attached please find the complaint filed by Don't Waste Arizona, Inc. against Hickman's Family Farms.

If you have any questions, please do not hesitate to contact me.

Sincerely,

Stephen M. Brittle
President

Howard M. Shanker (#015547)
THE SHANKER LAW FIRM, PLC.
700 E. Baseline Road, Bldg. B
Tempe, Arizona 85283
Phone: (480) 838-9300
Facsimile: (480) 838-9433
howard@shankerlaw.net

Attorneys for Plaintiffs

**UNITED STATES DISTRICT COURT
DISTRICT OF ARIZONA**

Don't Waste Arizona, Inc., a 501(c)(3) not-
for-profit company organized under the laws
of the State of Arizona

Plaintiffs,

v.

Hickman's Egg Ranch, Inc.,

Defendants.

Case No.:

COMPLAINT

**(Violations of the Emergency
Planning and Community Right to
Know Act)**

Plaintiff, by its undersigned attorneys, alleges upon personal knowledge, and upon
information and belief, as for its Complaint as follows:

NATURE OF THE ACTION

1. Plaintiff is seeking civil penalties and reasonable attorney's fees based on
Defendant's ongoing failure to report ammonia emissions from its facilities in Tonopah,
Arizona and Arlington, Arizona in violation of the Emergency Planning and Community
Right-to-Know Act ("EPCRA"), 42 U.S.C. §§ 11001-11050. Such emissions are ongoing
and likely to continue into the future;

COMPLAINT

- 1 -

THE SHANKER LAW FIRM, PLC.
700 EAST BASELINE ROAD, BLDG. B • TEMPE, AZ 85283
TELEPHONE (480) 838-9300 • FACSIMILE (480) 838-9433
howard@shankerlaw.net

JURISDICTION AND VENUE

2. This Court has jurisdiction over this action pursuant to 28 U.S.C. § 1331 (Federal Question); and 42 U.S.C. § 11046(c), EPCRA § 326(c);

3. Venue in this Court is proper under 42 U.S.C. § 11046(b)(1), EPCRA § 326(b);

4. EPCRA mandates that a putative plaintiff must provide a 60- day notice prior to filing suit. 42 U.S.C. § 11046(d); EPCRA § 326(d). Plaintiff provided the requisite 60- day notice on or about May 2, 2016 (Attached as Ex. 1 hereto);

PARTIES

5. Plaintiff Don't Waste Arizona, Inc. ("DWA") is a 501(c)(3), not-for-profit organization organized under the laws of the State of Arizona. Its offices are located at 2934 W. Northview Avenue, Phoenix Arizona 85051. DWA is a membership organization whose organizational purpose is to protect the Arizona environment and to educate community members and members of DWA about environmental stressors that could potentially impact their health and use and enjoyment of their properties. DWA's interests in a safe environment and an informed public are germane to the purposes of the organization and this suit;

6. Members of DWA live in close proximity to each of the two Hickman facilities at issue herein and are directly impacted by, *inter alia*, the unreported releases of large amounts of ammonia. These same DWA members are also denied access to important

1 information about the nature and extent of Defendant's emissions that would inform their
2 decisions on, for example, whether to go outside, to entertain, and/or where to live or work;

3
4 7. Members of DWA: (a) would otherwise have standing to sue in their own
5 right; (b) the interests DWA seeks to protect are germane to the organization's purpose; and
6 (c) neither the claim asserted nor the relief requested requires the participation of individual
7 members in the lawsuit. *See*, attached Declarations (Ex. 2).

8
9 8. Defendant Hickman's Egg Ranch, Inc. is an Arizona corporation with its
10 headquarters at 6515 South Jackrabbit Trail, in Buckeye, Arizona ("Hickman"). Hickman
11 owns and operates both the Arlington and the Tonopah facilities, respectively;

12 **ALLEGATIONS COMMON TO ALL COUNTS**

13
14 9. Plaintiff re-alleges and incorporates the preceding paragraphs as if fully set
15 forth herein.

16 10. The U.S. EPA defines a large concentrated animal feed operation ("CAFO") as
17 82,000 laying hens if a dry manure handling system is used and 30,000 laying hens if a wet
18 system is used. 40 C.F.R. § 122.23(b)(4)(ix) and (xi);

19
20 11. Hickman owns and operates Desert Pride Farms, which is located at or about
21 41625 W. Indian School Road in Tonopah, Arizona (hereinafter the "Tonopah Facility").

22 12. According to the Tonopah Nutrient Management Plan, submitted by Hickman
23 to the State on October 31, 2014, the Tonopah Facility houses over 3,072,000 laying hens
24 and is in the process of expanding its operations to significantly increase the number of birds
25 on site;
26

1 13. Hickman also owns and operates the Arlington Facility that is located at or
2 about 32425 West Salome Highway, Arlington, Arizona;

3 14. According to the Arlington Nutrient Management Plan, submitted by Hickman
4 to the State on December 9, 2015, the Arlington Facility houses over 5,876,261 chickens
5 (approximately 3,718,244 and 2,157,917 pullets). The Arlington Facility is also in the
6 process of expanding its operations to significantly increase the number of birds on site;
7

8 15. Section 304 of EPCRA, 42 U.S.C. §11004, requires, *inter alia*, that ammonia
9 (NH₃) emissions that exceed the reportable quantity threshold of 100 lbs/day be reported.
10
11 See, 40 C.F.R. 302.4 and 40 C.F.R. Part 355, Appendix A;

12 16. The EPA released a report on emissions data from two manure belt layer
13 houses in Indiana on July 31, 2010 as part of the National Air Emissions Monitoring Study
14 (“NAEMS”);¹
15

16 17. According to the NAEMS IN2B study, any manure belt layer operation, such
17 as Hickman’s, with over 157,000 birds would likely be exceeding the 100 lbs/day reportable
18 quantity threshold for ammonia emissions and should be reporting ammonia emissions;
19

20 18. Hickman’s Tonopah Facility, which conservatively houses approximately
21 3,072,000 birds, has estimated daily ammonia emissions of over 4,014.08 lbs;

22 19. Hickman’s Arlington Facility, which conservatively houses approximately
23 5,876,261 birds, has estimated daily ammonia emissions of over 7,678.3 lbs;
24

25 ¹ Heber, Albert J., “Emissions Data from Two Manure-Belt Layer Houses in Indiana:
26 Final Report for Site IN2B of the National Air Emissions Monitoring Study,” July 31, 2010,
available at: <http://www.epa.gov/airquality/agmonitoring/pdfs/IN2BSSummary Report.pdf>.

COUNT 1

(Violations of EPCRA at the Tonopah Facility)

21. Plaintiff re-alleges and incorporates the preceding paragraphs as if fully set forth herein;

22. EPCRA § 304(a) and (b) requires owners or operators of a facility to provide immediate notice, to the appropriate government entities, for any release that requires CERCLA notification and for releases of EPCRA § 302 extremely hazardous substance (such as ammonia). 42 U.S.C. § 11004(a); 40 C.F.R. § 355.40(b)(1);

23. EPCRA § 304(c), 42 U.S.C. § 11004(c), requires any owner or operator who has had a release that is reportable under EPCRA § 304(a), to provide, as soon as practicable, a follow-up written notice, updating the information required under Section 304(b);

24. Pursuant to Section 326(a) of EPCRA, 42 U.S.C. § 11046 (a), any person may commence a civil action against, *inter alia*, an owner or operator of a facility for failure to submit a follow up emergency notice under Section 11004(c), EPCRA§ 304(c);

25. The Tonopah Facility is a “facility” as defined at 42 U.S.C. § 11049(4), EPCRA § 329(4);

27. Defendant failed to submit the requisite emergency notice under Section 304 of EPCRA, 42 U.S.C. §11004, which, in part, requires that ammonia (NH₃) emissions greater than 100 lbs/day be reported. *See*, 40 C.F.R. 302.4 and 40 C.F.R. Part 355, Appendix A;

28. Ammonia emissions from the Tonopah Facility exceed 100 lbs/day;

29. Defendant has failed to comply with the follow up written notice obligations set forth in EPCRA § 304(c) for over 592 days;

30. EPCRA § 325, 42 U.S.C. § 11045(b), provides for the assessment of a penalty of not more than \$25,000 per day for each day during which the violation continues – pursuant, in part, to the Civil Monetary Penalty Inflation Adjustment Rule, violations of Section 304 that occur after January 12, 2009 are subject to the statutory maximum civil penalty of \$37,500 per day for each day a violation continues. *See*, 73 Fed. Reg. at 7345, Table 1 of § 19.4 (Dec. 11, 2008);

31. For a violation of EPCRA § 304 that has been ongoing for, at least, 592 days, Defendant is liable for a civil penalty of up to \$22,200,000;

COUNT 2

(Violations of EPCRA at the Arlington Facility)

32. Plaintiff re-alleges and incorporates the preceding paragraphs as if fully set forth herein;

1 33. EPCRA § 304(c), 42 U.S.C. § 11004(c), requires any owner or operator who
2 has had a release that is reportable under EPCRA § 304(a), to provide, as soon as practicable,
3 a follow-up written notice, updating the information required under Section 304(b);
4

5 34. Pursuant to Section 326(a) of EPCRA, 42 U.S.C. § 11046 (a), any person may
6 commence a civil action against, *inter alia*, an owner or operator of a facility for failure to
7 submit a follow up emergency notice under Section 11004(c), EPCRA§ 304(c);
8

9 35. The Arlington Facility is a “facility” as defined at 42 U.S.C. § 11049(4),
10 EPCRA § 329(4);

11 36. Defendant is an owner and/or operation of a facility, who had actual or
12 constructive knowledge of a release of a hazardous substance, in an amount that exceeds the
13 threshold reportable quantity;
14

15 37. Defendant failed to submit the requisite emergency notice under Section 304 of
16 EPCRA, 42 U.S.C. §11004, which, in part, requires that ammonia (NH3) emissions greater
17 than 100 lbs/day be reported. *See*, 40 C.F.R. 302.4 and 40 C.F.R. Part 355, Appendix A;
18

19 38. Ammonia emissions from the Arlington Facility exceed 100 lbs/day;
20

21 39. Defendant has failed to comply with the follow up written notice obligations
22 set forth in EPCRA § 304(c) for over five-years;
23

24 40. EPCRA § 325, 42 U.S.C. § 11045(b), provides for the assessment of a penalty
25 of not more than \$25,000 per day for each day during which the violation continues –
26 pursuant, in part, to the Civil Monetary Penalty Inflation Adjustment Rule, violations of
Section 304 that occur after January 12, 2009 are subject to the statutory maximum civil

1 penalty of \$37,500 per day for each day a violation continues. *See*, 73 Fed. Reg. at 7345,
2 Table 1 of § 19.4 (Dec. 11, 2008);

3 41. Ammonia emissions from the Arlington Facility greatly exceed 100 lbs/day;

4 42. Defendant has failed to report releases of ammonia in amounts that exceed the
5 reportable quantity threshold from the Arlington Facility for over five-years;

6 43. For this specific violation of EPCRA, the U.S. EPA penalty policy provides for
7 a civil penalty of up to \$37,500 per day, per violation, for a total penalty – with a five (5)
8 year statute of limitations on such emissions/penalties – of \$68,437,500 (365 days x 5 years
9 x \$37,500/per day);
10
11

12
13 **PRAYER FOR RELIEF**

14 WHEREFORE, Plaintiffs pray for the following relief:

15 1. Find that Defendant has failed, and continues to fail, to report ammonia
16 emissions from both its Arlington and Tonopah Facilities as required, in part, by Section
17 304(c) of EPCRA, 42 U.S.C. §11004(c);

18 2. Find that Defendant is liable for a civil penalty of up to \$90,637,500 for the
19 ongoing violations of EPCRA from its Tonopah and Arlington Facilities. *See*, 42 U.S.C. §
20 11046(c), EPCRA § 326(c) (authorizing the Court to impose civil penalties in a citizen's
21 enforcement action);
22

23 5. Find that Defendant is responsible for Plaintiffs' reasonable attorneys' fees and
24 costs of litigation, *See* 42 U.S.C. § 11046(f), EPCRA § 326(f);
25
26

6. Grant to Plaintiffs such other and further relief as this Court may deem just, equitable or proper.

DATED this day of September 29, 2016.

THE SHANKER LAW FIRM, PLC.

By: /s/ Howard M. Shanker
Howard M. Shanker
700 East Baseline Road, Bldg. B
Tempe, Arizona 85283
Phone: (480) 838-9300
Facsimile: (480) 838-9433
howard@shankerlaw.net

Attorneys for Plaintiffs

Message

From: OIG News [OIG.News@epa.gov]
Sent: 9/19/2017 5:31:08 PM
To: Dunham, Sarah [Dunham.Sarah@epa.gov]; Starfield, Lawrence [Starfield.Lawrence@epa.gov]
CC: Pruitt, Scott [Pruitt.Scott@epa.gov]; Jackson, Ryan [jackson.ryan@epa.gov]; Darwin, Henry [darwin.henry@epa.gov]; Chmielewski, Kevin [chmielewski.kevin@epa.gov]; Bloom, David [Bloom.David@epa.gov]; Trent, Bobbie [Trent.Bobbie@epa.gov]; Anthony, Sherri [Anthony.Sherri@epa.gov]; Howard, MarkT [Howard.MarkT@epa.gov]; Minoli, Kevin [Minoli.Kevin@epa.gov]; Lyons, Troy [lyons.troy@epa.gov]; Valentine, Julia [Valentine.Julia@epa.gov]; Threet, Derek [Threet.Derek@epa.gov]; Shaw, Betsy [Shaw.Betsy@epa.gov]; Cozad, David [Cozad.David@epa.gov]; Traylor, Patrick [traylor.patrick@epa.gov]; Spriggs, Gwendolyn [Spriggs.Gwendolyn@epa.gov]; Vincent, Marc [Vincent.Marc@epa.gov]
Subject: OIG Report: "Eleven Years After Agreement, EPA Has Not Developed Reliable Emission Estimation Methods to Determine Whether Animal Feeding Operations Comply With Clean Air Act and Other Statutes"
Attachments: _epaig_20170919-17-P-0396_cert.pdf

Attached is the EPA Office of Inspector General (OIG) report, *Eleven Years After Agreement, EPA Has Not Developed Reliable Emission Estimation Methods to Determine Whether Animal Feeding Operations Comply With Clean Air Act and Other Statutes* (Report No. 17-P-0396). This report will be available to the public on the OIG's website at www.epa.gov/oig.



U.S. ENVIRONMENTAL PROTECTION AGENCY

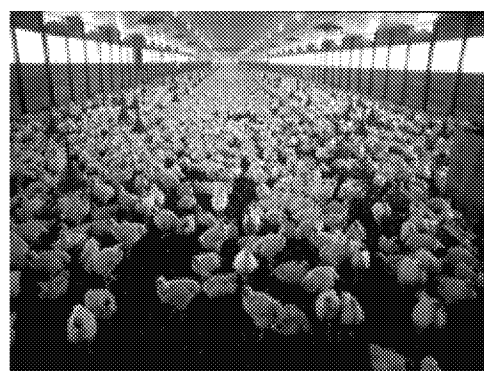
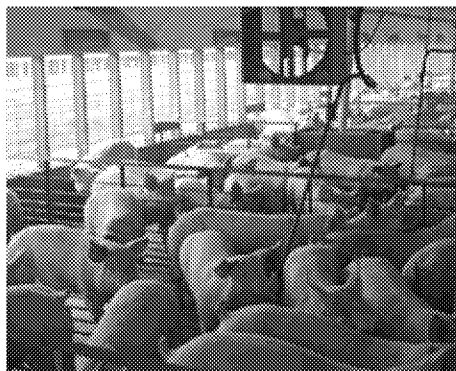
OFFICE OF INSPECTOR GENERAL

Improving air quality

**Eleven Years After Agreement,
EPA Has Not Developed Reliable
Emission Estimation Methods to
Determine Whether Animal
Feeding Operations Comply With
Clean Air Act and Other Statutes**

Report No. 17-P-0396

September 19, 2017



Report Contributors:

Richard Jones
Erica Hauck
Jim Hatfield
Kevin Good
Julie Narimatsu

Abbreviations

AFO	Animal Feeding Operation
CAA	Clean Air Act
CAFO	Concentrated Animal Feeding Operation
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act
DQO	Data Quality Objective
EEM	Emissions Estimating Methodology
EPA	U.S. Environmental Protection Agency
EPCRA	Emergency Planning and Community Right-to-Know Act
GAO	U.S. Government Accountability Office
NAEMS	National Air Emissions Monitoring Study
NAS	National Academy of Sciences
OAQPS	Office of Air Quality Planning and Standards
OIG	Office of Inspector General
PM	Particulate Matter
SAB	Science Advisory Board
USDA	U.S. Department of Agriculture
VOC	Volatile Organic Compound

Cover photos: Hogs (left) and chickens (right) in confined spaces at animal feeding operations. (EPA photos)

Are you aware of fraud, waste or abuse in an EPA program?

EPA Inspector General Hotline

1200 Pennsylvania Avenue, NW (2431T)
Washington, DC 20460
(888) 546-8740
(202) 566-2599 (fax)
OIG_Hotline@epa.gov

Learn more about our [OIG Hotline](#).

EPA Office of Inspector General

1200 Pennsylvania Avenue, NW (2410T)
Washington, DC 20460
(202) 566-2391
www.epa.gov/oig

Subscribe to our [Email Updates](#)
Follow us on Twitter [@EPAoig](#)
Send us your [Project Suggestions](#)



At a Glance

Why We Did This Review

We conducted this review to determine what actions the U.S. Environmental Protection Agency (EPA) has taken to evaluate air emissions from animal feeding operations.

The EPA estimates there are about 18,000 large animal feeding operations nationwide, which can potentially emit air pollutants in high-enough quantities to subject these facilities to Clean Air Act and other statutory requirements. A lack of reliable methods for estimating these emissions prevented the EPA and state and local agencies from determining whether these operations are subject to statutory requirements.

In 2005, the EPA and the animal feeding operations industry entered into a compliance agreement to address this challenge. As part of this agreement, the industry agreed to fund an air emissions monitoring study that the EPA would use to develop improved emission estimating methodologies for the industry.

This report addresses the following:

- *Improving air quality.*

Send all inquiries to our public affairs office at (202) 566-2391 or visit www.epa.gov/oig.

Listing of [OIG reports](#).

Eleven Years After Agreement, EPA Has Not Developed Reliable Emission Estimation Methods to Determine Whether Animal Feeding Operations Comply With Clean Air Act and Other Statutes

What We Found

The industry-funded National Air Emissions Monitoring Study (NAEMS) and the EPA's analyses of the study's results comprised the agency's primary actions to evaluate air emissions from animal feeding operations over the past decade. The NAEMS monitoring was completed more than 7 years ago at a cost of about \$15 million, but the EPA had not finalized any emission estimating methodologies for animal feeding operations. In addition, the EPA had only drafted methodologies for about one-fourth of the emission source and pollutant combinations studied in the NAEMS. The EPA expected to develop and begin publishing emission estimating methodologies by 2009, so the methodologies could be used by the EPA, state and local agencies, and industry operators to determine the applicability of Clean Air Act and other statutory requirements.

Until the EPA develops sound methods to estimate emissions, the agency cannot reliably determine whether animal feeding operations comply with applicable Clean Air Act requirements.

Delays in developing the emission estimating methodologies stemmed from limitations with NAEMS data, uncertainty about how to address significant feedback from the EPA's Science Advisory Board, and a lack of EPA agricultural air expertise and committed resources. The EPA had not finalized its work plan or established timeframes to finish the methodologies. As a result, the applicability of requirements to control emissions from individual animal feeding operations remained undetermined, enforcement protections for consent agreement participants remained in effect longer than anticipated, and a number of agency actions on animal feeding operation emissions continued to be on hold. Further, because the EPA had not conducted systematic planning, the agency was at risk of developing emission estimating methodologies that cannot be widely applied to animal feeding operations.

Recommendations and Planned Corrective Actions

We recommend that the EPA conduct systematic planning for future development of emission estimating methodologies. Based on the results of this planning, the EPA should determine whether it can develop emission estimating methodologies of appropriate quality for each of the emission source and pollutant combinations studied. If the EPA determines that it cannot develop certain emission estimating methodologies, it should notify agreement participants and end civil enforcement protections. For the emission estimating methodologies that can be developed, the EPA should establish public milestones for issuing the draft methodologies. The EPA agreed with our recommendations, and we accepted the agency's planned corrective actions.



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
WASHINGTON, D.C. 20460

THE INSPECTOR GENERAL

September 19, 2017

MEMORANDUM

SUBJECT: Eleven Years After Agreement, EPA Has Not Developed
Reliable Emission Estimation Methods to Determine Whether
Animal Feeding Operations Comply With Clean Air Act and Other Statutes
Report No. 17-P-0396

FROM: Arthur A. Elkins Jr.

A handwritten signature in black ink, appearing to read "Arthur A. Elkins Jr.", written over the printed name.

TO: Sarah Dunham, Acting Assistant Administrator
Office of Air and Radiation

Lawrence Starfield, Acting Assistant Administrator
Office of Enforcement and Compliance Assurance

This is our report on the subject evaluation conducted by the Office of Inspector General (OIG) of the U.S. Environmental Protection Agency (EPA). The project number for this evaluation was OPE-FY16-0018. This report contains findings that describe the problems the OIG has identified and corrective actions the OIG recommends. This report represents the opinion of the OIG and does not necessarily represent the final EPA position. Final determinations on matters in this report will be made by EPA managers in accordance with established audit resolution procedures.

Action Required

In accordance with EPA Manual 2750, your office provided planned corrective actions in response to the OIG recommendations. We consider the planned corrective actions for all recommendations to be acceptable. Therefore, you are not required to provide a written response to this final report. The OIG may make periodic inquiries on your progress in implementing these corrective actions. Please update the EPA's Management Audit Tracking System as you complete planned corrective actions.

We will post this report to our website at www.epa.gov/oig.

Table of Contents

Chapters

1	Introduction	1
	Purpose	1
	Background.....	1
	Responsible Offices	8
	Scope and Methodology	8
	Prior Report	9
2	EPA Plans for Finalizing EEMs Were Not Accomplished and Potential Air Quality Impacts Continue	10
	Development of EEMs Is Years Behind Schedule.....	10
	Responding to SAB Concerns and a Lack of Resources Slowed Development of EEMs	12
	AFO Air Emissions Remain Largely Uncharacterized and Important Agency Actions Are on Hold	16
	Conclusion	18
3	EPA Needs to Implement Systematic Planning to Assure That EEMs Have Sufficient Quality.....	19
	EPA Quality System	19
	EPA Has Not Fully Implemented a Systematic Planning Process to Assure a Desired Level of Quality for EEMs	21
	Conclusion	22
	Recommendations	23
	Agency Response and OIG Evaluation.	24
4	EPA Has Not Updated Some Stakeholders and Public on Current Status of EEM Efforts	25
	EPA Provided Extensive Public Outreach During Early Stages.....	25
	EPA Has Not Publicly Communicated on EEM Development Efforts Since 2013.....	25
	Conclusion	26
	Recommendation.....	26
	Agency Response and OIG Evaluation	26
	Status of Recommendations and Potential Monetary Benefits	27

- continued -

Appendices

A	Office of Air and Radiation Response to Draft Report.....	28
B	Office of Enforcement and Compliance Assurance Response to Draft Report	31
C	Distribution	34

Chapter 1

Introduction

Purpose

We conducted this evaluation to determine what actions the U.S. Environmental Protection Agency (EPA) has taken to evaluate air emissions from animal feeding operations (AFOs), including the status of the National Air Emissions Monitoring Study (NAEMS).

Background

AFOs are agriculture operations where animals are kept and raised in confined areas. The U.S. Department of Agriculture (USDA) has estimated that there are about 450,000 AFOs nationwide. While the majority of these are small operations with fewer than 300 animals, the EPA has estimated there are more than 18,000 large AFOs¹ that may raise thousands of animals. For more than two decades, movements to improve profitability within the agriculture industry have resulted in larger AFO facilities that often are geographically concentrated. As facility size has increased and greater numbers of animals are housed in confined spaces, concerns have arisen regarding these facilities' impacts on the environment and public health.

The EPA regulates certain larger AFOs under the Clean Water Act's National Pollutant Discharge Elimination System permit program, which regulates the discharge of pollutants to the waters of the United States. AFO air emissions are not regulated by any AFO-specific standards under the Clean Air Act (CAA), but AFOs that emit air pollutants in sufficient quantities can trigger CAA permit requirements. In the late 1990s, the EPA recognized that it did not have sufficient AFO air emissions data to develop reliable emission estimating methodologies (EEMs) for determining whether individual AFOs are subject to CAA permit requirements or emission reporting requirements under two other statutes: the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) and the Emergency Planning and Community Right-to-Know Act (EPCRA).² Both CAA permitting requirements and CERCLA/EPCRA release

¹ EPA water regulations define AFOs and a subset of larger AFOs called concentrated animal feeding operations (CAFOs), and the Clean Water Act includes CAFOs as a type of point source. The CAA does not define or reference these terms, and the EPA's Office of Air and Radiation does not distinguish between an AFO and a CAFO. Thus, we use the term "AFO" throughout our report, even when referring to a facility that would meet the definition of a CAFO under the Clean Water Act.

² EPCRA and CERCLA require facilities to report emissions of certain hazardous substances if they are released in quantities at or above certain thresholds. This includes two hazardous substances commonly released by AFOs: ammonia and hydrogen sulfide.

reporting requirements are triggered only if a facility emits certain pollutants at or above specific regulatory thresholds.

The agency began discussions with representatives of the AFO industry in 2001 to address uncertainty in determining the applicability of statutory requirements for air emissions. As a result, the EPA and certain sectors of the AFO industry³ (e.g., pork and broiler producers, egg layers, and dairy) negotiated a consent agreement, which was published in 2005⁴ and entered into by AFO owners/operators who elected to participate. Under this agreement, participating AFO owners/operators agreed to pay a civil penalty, comply with all applicable requirements of the agreement, and participate (if selected) in a national monitoring study. The AFO sectors agreed to fund the monitoring study to provide data the EPA would use to develop EEMs for various AFO pollutants and emission sources.

Air Emissions From AFOs

AFOs can release several pollutants, including but not limited to: ammonia, hydrogen sulfide, particulate matter (PM), volatile organic compounds (VOCs) and hazardous air pollutants. AFO air emissions come from lagoons, barns and other structures, and manure spread on fields. Table 1 lists the key pollutants emitted from AFOs, along with their common emission sources and associated health and air quality effects.

Table 1: Emission sources and health effects of key pollutants from AFOs

Pollutant	Common emission sources	Health and air quality effects
Ammonia (NH ₃)	Decomposition of animal manure.	Can cause severe cough and chronic lung disease. It also contributes directly to the formation of PM _{2.5} , and deposition can impact sensitive ecosystems.
Volatile organic compounds (VOCs)	Animal feed and waste.	Can cause eye, nose and throat irritation; damage to liver, kidney and central nervous system; and cancer. VOCs also contribute to the formation of ground-level ozone.
Particulate matter (PM)*	Dry manure, bedding and feed materials, and dirt feed lots.	Exposure is linked to a variety of problems, including decreased lung function, increased respiratory symptoms, and premature death in people with heart or lung disease.
Hydrogen Sulfide (H ₂ S)	Decomposition of animal manure stored in wet conditions such as lagoons.	Can cause eye and respiratory irritation at lower concentrations. At higher concentrations, paralysis of the respiratory center can lead to rapid death. Excess emissions can contribute to the formation of PM _{2.5} and acid rain.

Source: EPA Office of Inspector General (OIG) analysis.

* PM includes both fine particles (PM_{2.5}.) and coarser particles (PM₁₀).

³ According to the EPA, state and local agencies, and an environmental organization also participated in initial discussions on the agreement.

⁴ Animal Feeding Operations Consent Agreement and Final Order, 70 Fed. Reg. 4958-4977 (Jan. 31, 2005).

AFOs can be located near residences, and some communities have multiple AFOs nearby. For example, several counties in eastern North Carolina have the highest concentration of swine AFOs in the United States. Some studies have raised concerns that lower-income and minority communities are disproportionately impacted by air emissions from AFOs. Studies conducted in North Carolina found that residents living near swine AFOs were disproportionately low-income people of color. Air pollution from these AFOs is associated with the potential health impacts listed in Table 1 above, as well as a reduced quality of life due to persistent odors⁵ and declining property values.⁶

Highlights from external studies on impacts from AFO air emissions:

- **Residential property values were reduced by an average of almost 23 percent within 1.25 miles of a large swine AFO.^a**
- **The closer children go to school near a large AFO, the greater the risk of asthma symptoms.^b**
- **Living in close proximity to large swine AFOs may result in impaired mental health and negative mood states, such as tension, depression or anger.^{c, d}**

^a Simons, R.A. et al., 2014. The Effect of a Large Hog Barn Operation on Residential Sales Prices in Marshall County, KY. JOSRE. 6(1).

^b Mirabelli, M. C. et al., 2006. Asthma Symptoms Among Adolescents Who Attend Public Schools That Are Located Near Confined Swine Feeding Operations. Pediatrics. 118;66-75.

^c Bullers, S., 2005. Environmental Stressors, Perceived Control, and Health: The Case of Residents Near Large-Scale Hog Farms in Eastern North Carolina. Human Ecology. 33(1).

^d Schiffman, S. S. et al., 1995. The Effect of Environmental Odors Emanating From Commercial Swine Operations on the Mood of Nearby Residents. Brain Research Bulletin. 37(4): 369-375.

Characterizing air emissions from AFOs is difficult due to a number of factors. AFOs can have many and varied sources of air emissions, including barns, houses, feedlots, pits, lagoons, basins and manure spray fields. Each of these emission sources can emit a variety of air pollutants, and emission rates can fluctuate depending on climate and geographical conditions, among other factors. Further, characterizing AFO air emissions requires expertise in multiple scientific disciplines, including animal nutrition, AFO practices and atmospheric chemistry.

The EPA and the USDA have been collaborating on a manual of voluntary best management practices to provide AFO owner/operators and state and local governments with options to reduce AFO air emissions. The manual contains best management practices for reducing particulate matter, ammonia, hydrogen sulfide, and other air emissions through various aspects of AFO management, including feed management, manure management, land application, and other areas. The EPA plans to publish the manual before the end of 2017, pending agency administration approval.

⁵ Odors are not regulated by the EPA, but may be addressed under some state and local laws.

⁶ Simons, R.A. et al., 2014. The Effect of a Large Hog Barn Operation on Residential Sales Prices in Marshall County, KY. JOSRE. 6(1).

Kim, J. et al., 2009. A Spatial Hedonic Approach to Assess the Impact of Swine Production on Residential Property Values. Environ Resource Econ. 42: 509-534.

National Academy of Sciences Report on AFO Air Emissions

In 2001, the EPA and USDA jointly requested that the National Academy of Sciences (NAS) evaluate the body of scientific information used for estimating various kinds of air emissions from AFOs. In 2003, the NAS reported⁷ that accurate emissions estimates were needed to determine AFOs' potential impacts and to assess the implementation of measures to control emissions. The NAS also reported that the EPA had not dedicated the necessary resources to estimate AFO air emissions, and that the agency's approach to estimating emissions was inadequate. That approach involved deriving emission factors from published emissions data, as well as gathering emission factors from existing literature. These emission factors were then applied to representative farms to estimate annual mass emissions. The NAS reported that this approach did not account for the variability among AFOs (e.g., differences in geography and climate) and thus cannot adequately estimate air emissions from an individual AFO.

The NAS recommended that the EPA develop a "process-based" approach to estimate AFO air emissions. The NAS favored such an approach for most types of emissions as the primary focus for both short- and long-term research,⁸ but also stated that short-term research should focus on providing "defensible estimates of air emissions that could be used to support responsible regulation."⁹ The NAS described process-based models as mathematical models "that describe the movement of various substances of interest at each major stage of the process of producing livestock products: movement into the next stage, movement in various forms to the environment, and ultimately movement into products used by humans."¹⁰

Air Compliance Agreement With AFO Industries

In 2002, spurred in part by uncertainty about emission levels from AFOs and concerns about applicability of CAA requirements, representatives of the pork, egg producers, and other AFO sectors proposed a plan to EPA officials to produce air emissions monitoring data from AFOs. Negotiations between the EPA and AFO sectors¹¹ lasted for more than 2 years before an agreement was finalized in 2005. As a condition of the 2005 Air Compliance Agreement (henceforth, the "Agreement"), the industry agreed to fund a large-scale emissions monitoring study. The EPA was to use the emissions monitoring data to develop EEMs that

⁷ *Air Emissions from Animal Feeding Operations: Current Knowledge, Future Needs*, NAS National Research Council (2003).

⁸ 2003 NAS report, pp. 152-153.

⁹ 2003 NAS report, p. 25.

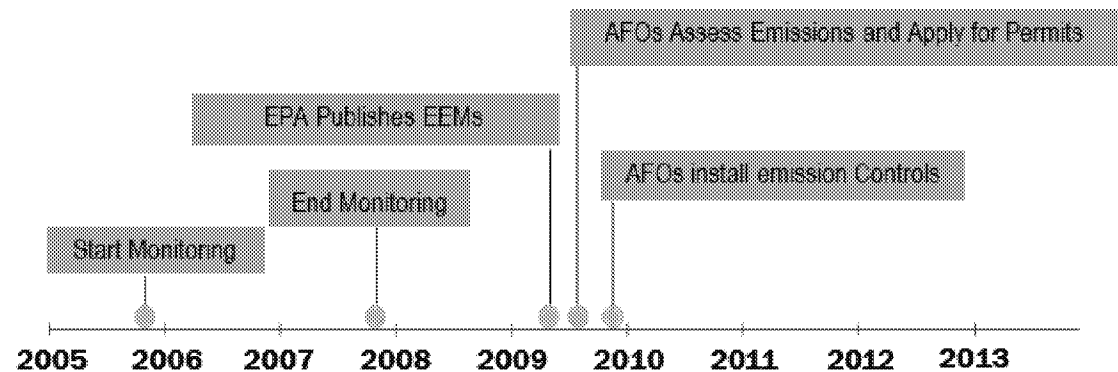
¹⁰ 2003 NAS report, p. 9.

¹¹ Participating AFO sectors included egg layers, broiler chickens, dairy cattle and swine. The turkey sector was a part of the negotiations as well, but not enough turkey AFO owners/operators signed up to fund monitoring. The Agreement did not cover beef cattle.

AFOs could apply to estimate their emissions and determine the applicability of CAA permitting and CERCLA/EPCRA release reporting requirements. Once a facility applied the EEMs to determine its emissions, the facility was to submit all required CAA permit applications and/or report any hazardous substance releases requiring notice under CERCLA/EPCRA.¹²

The Federal Register Notice (henceforth, the “Notice”) that published the Agreement included the EPA’s expectation that the emissions monitoring study would begin in 2005 and last 2 years. The Notice also described the EPA’s expected timeframes for completing the tasks subsequent to the study. Based on these original expectations, the EPA would begin publishing final EEMs in 2009, and AFOs would have obtained any necessary permits and installed emission controls by 2010. Figure 1 shows the timing for these different activities.

Figure 1: Expected timeframes for monitoring study and EEM development



Source: OIG analysis of the Notice publishing the Agreement. 70 Fed. Reg. 4958-4977 (Jan. 31, 2005).

¹² In a 2008 rule, the EPA exempted from CERCLA Section 103 reporting requirements all releases of hazardous substances to the air from animal waste at AFOs. The rule also exempted such releases from EPCRA Section 304 reporting requirements, except when AFOs confine a number of animals at or above the large CAFO threshold, as defined under Clean Water Act regulations. However, on April 11, 2017, the U.S. Court of Appeals for the District of Columbia Circuit ruled in favor of a group of environmental organizations that challenged the exemption and ordered that the 2008 rule be vacated (*Waterkeeper Alliance et al. v. EPA*). On July 17, 2017, the EPA filed a motion requesting the Court grant a stay of the ruling for six months to allow the EPA time to develop guidance for farms on reporting requirements. On August 16, 2017, the Court ordered a stay of the ruling through November 14, 2017. The EPA has 75 days from August 16, 2017, to request an extension of the stay if needed.

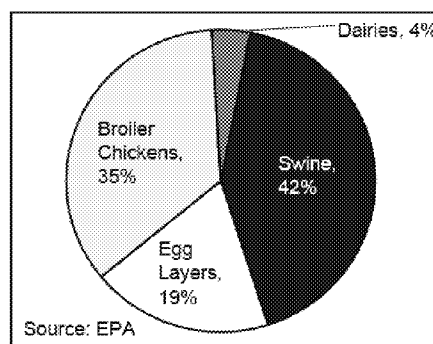
Primary provisions for AFOs participating in the Air Compliance Agreement include:

- Pay up to \$2,500 per farm to fund a 2-year emissions study.
- Agree to make their property available for emissions monitoring if selected as a monitoring site for the study.
- Pay a civil penalty ranging from \$200 to \$1,000, depending on the size and number of AFOs covered by the participant's Air Compliance Agreement.
- Receive protection from enforcement actions for civil violations of the CAA, CERCLA and EPCRA, to last until either (1) the EPA finalizes EEMs, or (2) the EPA notifies the facility that it was unable to finalize EEMs.

Under the Agreement, participating AFOs were granted a release and covenant not to sue for potential CAA, CERCLA and EPCRA violations alleged in the Agreement (henceforth, “civil enforcement protections”) until the EEMs are developed and AFOs apply for applicable CAA permits and report qualifying releases under CERCLA and EPCRA, or the EPA determines it cannot develop EEMs and notifies Agreement participants accordingly.

The EPA entered into 2,568 separate agreements with AFO owners and operators, which covered about 13,900 AFOs in 42 states. According to the EPA, these 13,900 AFOs comprise more than 90 percent of the largest AFOs in the United States. Figure 2 illustrates the percentage of all Agreement participants by type of animal raised.

Figure 2: Agreement participants by type of animal raised



Monitoring Study Methodology

About \$15 million was collected from the AFO sectors participating in the Agreement to fund the NAEMS emissions study. The NAEMS protocol provided the framework for the field sampling plan, and was developed through a collaborative effort of industry experts, university scientists, EPA and other government scientists, and other stakeholders knowledgeable in the field. The Agricultural Air Research Council—a nonprofit organization established by industry—was responsible for managing and disbursing funds for the study.

The Agricultural Air Research Council was also responsible for selecting a Science Advisor to develop a detailed study design and quality assurance plan, and to oversee the emissions monitoring work, including work conducted by the contracted principal investigators. The principal investigators—most of whom were researchers at land grant universities with expertise in animal agriculture and/or emissions measurement—carried out the monitoring at selected sites. EPA staff did not collect monitoring data, but conducted audits at monitoring sites to ensure that proper techniques and protocols were followed.

Monitoring was conducted at 27 total sites (i.e., specific sources of emissions such as a barn or a lagoon).¹³ Measurements of ammonia, particulate matter (PM₁₀ and PM_{2.5}),¹⁴ total suspended particulates, VOCs, hydrogen sulfide, and carbon dioxide¹⁵ were taken at broiler chicken, egg layer, swine, and dairy confinement sites (e.g., houses and barns). Measurements of ammonia, hydrogen sulfide, and VOCs were taken at swine and dairy open-source sites (e.g., lagoons and basins). Figure 3 shows the location of monitoring sites across the country.

Figure 3: NAEMS monitoring site locations



Source: OIG analysis of NAEMS site reports.

Other types of measurements were also taken at monitoring sites to help characterize emissions. These measurements included meteorological data (such as temperature and wind speed), and information on the number of animals at AFO monitoring locations, how the animals were housed, and how their waste was managed. The Agreement stated that the EPA would use data from the NAEMS and any other relevant data to develop EEMs.

¹³ The 27 monitoring sites were located at 23 AFOs. Monitoring was conducted at two sites (emission sources) for four of the 23 participating AFOs.

¹⁴ PM₁₀ describes inhalable particles with diameters that are generally 10 micrometers and smaller. PM_{2.5} describes fine inhalable particles with diameters that are generally 2.5 micrometers and smaller.

¹⁵ While carbon dioxide was measured at confinement sites as part of the NAEMS, the EPA never intended to create EEMs for carbon dioxide emissions.

Responsible Offices

The EPA office primarily responsible for development of the Agreement was the Office of Enforcement and Compliance Assurance. The EPA office responsible for developing EEMs from the NAEMS data is the Office of Air Quality Planning and Standards within the EPA's Office of Air and Radiation, while the Office of Research and Development plays a supporting role.

Scope and Methodology

We conducted our performance audit from April 2016 through May 2017, in accordance with generally accepted government auditing standards. Those standards require that we obtain sufficient, appropriate evidence to provide a reasonable basis for our findings and conclusions based on our objective. We believe the evidence obtained provides a reasonable basis for our findings and conclusions based on our audit objective.

To address our objective, we identified and reviewed applicable statutes, regulations, policies and guidance, including sections of the CAA and the Clean Water Act, CAA permitting requirements and thresholds, and the Agreement and associated monitoring protocol. To help us determine the status of the EPA's NAEMS, as well as other efforts to evaluate AFO air emissions, we obtained and reviewed EPA emission reports and analyses, NAEMS-related reports and studies, an EPA Science Advisory Board (SAB) report, and documents related to EPA legal proceedings.

To determine state efforts to address AFO air emissions, we reviewed state regulations and programs for a selected number of states. We also reviewed petitions requesting that the EPA regulate AFO air emissions, and an administrative complaint alleging discrimination against minorities in North Carolina in permitting AFOs. In addition, we reviewed academic studies and reports to determine AFO air emissions and health impacts, and potential disparate impacts in overburdened communities.

We interviewed EPA staff and managers in the Office of Air Quality Planning and Standards, the Office of Enforcement and Compliance Assurance, the Office of Research and Development, the Office of Civil Rights, the Office of Water, and EPA Region 4 (which covers North Carolina), to gain an understanding of EPA actions to evaluate and address AFO air emissions. We also interviewed the following stakeholders to discuss the Agreement and the history and status of the NAEMS:

- USDA's Natural Resources Conservation Service staff.
- SAB members who reviewed the EPA's draft EEMs.
- An AFO industry advisor.
- AFO academic researchers at Purdue University, North Carolina State University, and University of North Carolina-Chapel Hill.

In addition, we interviewed organizations (Sierra Club, Food & Water Watch, EarthJustice, Waterkeeper Alliance) that submitted CAA petitions to regulate AFO emissions. We also interviewed organizations that submitted a Title VI administrative complaint (the North Carolina Environmental Justice Network and the Rural Empowerment Association for Community Help) alleging discrimination in AFO permitting in North Carolina.

To assess internal controls, we reviewed EPA policies and guidance on quality assurance, including the following:

- The EPA's Quality Policy.
- The EPA's Procedure for Quality Policy.
- The EPA's *Guidance on Systematic Planning Using the Data Quality Objectives Process*.
- The EPA's Office of Air Quality Planning and Standards' Quality Management Plan.

We also reviewed the quality assurance project plans developed for the NAEMS and early draft EEM development.

Prior Report

In September 2008, the U.S. Government Accountability Office (GAO) issued a report on AFOs titled *Concentrated Animal Feeding Operations: EPA Needs More Information and a Clearly Defined Strategy to Protect Air and Water Quality from Pollutants of Concern* (GAO-08-944). GAO reported that the EPA did not have the data needed to effectively regulate CAFO air emissions; specifically, the EPA lacked data on air emission from CAFOs, which the EPA is trying to address through the NAEMS. GAO found that the EPA lacked consistent and accurate data for CAFOs regulated under the Clean Water Act, and that such data—like the locations of the CAFOs—could assist with an assessment of CAFO air emissions. GAO reported that two, then-recent decisions by the EPA suggest that the agency had not yet determined how it intended to regulate air emissions from CAFOs:

- The EPA proposed to exempt releases to the air of hazardous substances from farm manure from both CERCLA and EPCRA notification requirements.
- The EPA stated it will not make key regulatory decisions on how federal air regulations apply to CAFOs until after the NAEMS is completed.

GAO recommended that the EPA (1) reassess the data collection efforts of the NAEMS, and (2) establish a strategy and timetable for developing process-based emission estimating protocols for CAFOs. GAO determined that the EPA has implemented the first recommendation but has not completed the second one.

Chapter 2

EPA Plans for Finalizing EEMs Were Not Accomplished and Potential Air Quality Impacts Continue

The EPA had not published any final EEMs for AFOs, and had not finalized its workplan or established timeframes for completing them. Moreover, progress had been limited since 2013, when the EPA's SAB concluded that draft EEMs developed by the EPA should not be applied on a national scale as intended, and made several recommendations to improve the EPA's statistical analyses. At the time of the Agreement in 2005, the EPA expected that it would begin publishing final EEMs in 2009. Further, the EPA expected that by 2010 the AFO industry would have used the EEMs to assess their emissions, apply for any applicable CAA permits, and install any necessary emission reduction controls.

The EPA collaborated with a committee of external stakeholders to develop a protocol they believed would provide sufficient, representative data for the EPA's EEM development efforts. However, public comments submitted to the EPA on the planned NAEMS protocol, and the 2008 GAO report, questioned whether the NAEMS would provide enough data to produce scientifically and statistically valid EEMs. As a result of the delays, individual AFOs have not applied EEMs to determine whether their air emissions were significant enough to require CAA permits and related emissions controls, while civil enforcement protections for Agreement participants remained in effect.

Development of EEMs Is Years Behind Schedule

Based on the original expectations for completion of the tasks in the Notice, the NAEMS monitoring would have been completed in 2007, and the EPA would have begun publishing EEMs in 2009. By 2010 all facilities would have done the following:

1. Applied the EEMs to determine whether they met or exceeded CAA permitting and/or CERCLA/EPCRA release reporting thresholds, and whether permitting and reporting were required.
2. Submitted any required CAA permit applications and CERCLA/EPCRA release notifications.
3. Implemented the mitigation and emission control requirements described in their permits. At this point, the protections from civil enforcement actions under the Agreement would have ended for participating AFOs.

However, EPA staff told us that this timeline did not account for time required for the EPA's Environmental Appeals Board to approve individual agreements, which took longer than anticipated and was not completed until December 2006. Further, it did not account for monitoring that occurred on a rolling basis, and thus took more than 2 years to complete.

The NAEMS monitoring was completed in early 2010, about 2 years later than originally expected. The EPA began developing draft EEMs after monitoring was completed. In 2012, the EPA placed its draft EEMs on its public website for public comment. Draft EEMs covered eight¹⁶ of the 36¹⁷ emission source and pollutant combinations described in the Agreement. The EPA's Office of Air and Radiation also submitted the draft EEMs to the SAB to obtain feedback on EEM development and related questions. The SAB conducted its review of draft EEMs in 2012 and issued its final report¹⁸ on April 19, 2013.

At the time we finished our review in May 2017, the EPA had not finalized any draft EEMs, or developed any additional draft EEMs. According to the 2005 Agreement, the EPA expected to begin publishing final EEMs within 18 months after completion of the NAEMS monitoring.

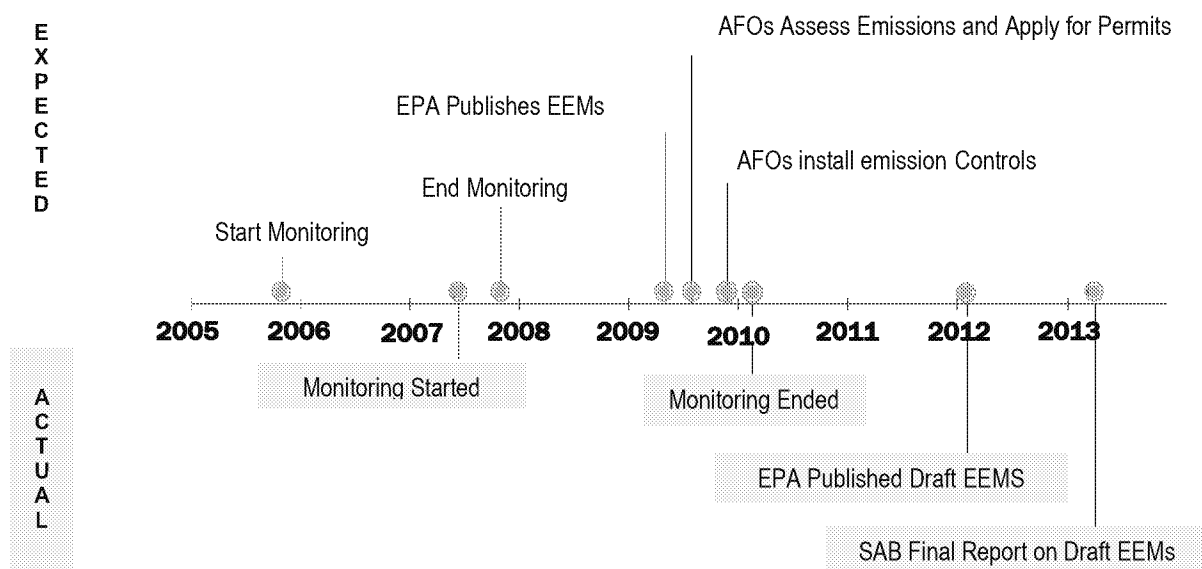
Figure 4 shows a timeline of expected and actual NAEMS and EEM development activities up to the 2013 SAB final report.

¹⁶ These included EEMs to estimate six different types of emissions from broiler chicken houses, and EEMs to estimate ammonia emissions from dairy and swine lagoons/basins. Also, see Table 2.

¹⁷ According to the Office of Air and Radiation, the number of EEMs that will ultimately be developed will be influenced by factors such as differences in production, management and building conditions, as well as availability of sufficient data.

¹⁸ *SAB Review of Emissions-Estimating Methodologies for Broiler Animal Feeding Operations and for Lagoons and Basins at Swine and Dairy Animal Feeding Operations*, EPA-SAB-13-003 (2013).

Figure 4: Expected and actual NAEMS/EEM development timeline



Source: OIG analysis of EPA documents.

Responding to SAB Concerns and a Lack of Resources Slowed Development of EEMs

The SAB identified several concerns with the draft EEMs, and the Office of Air and Radiation did not agree with some of the concerns. Since that time, EEM development slowed considerably, as the EPA decided how to address the SAB's concerns. The EPA also encountered resource constraints and a lack of available technical expertise.

Table 2 shows all emission source and pollutant combinations from the Agreement,¹⁹ and the draft EEMs that were developed and submitted to the SAB for review.

Table 2: Status of EEM development

Pollutant	PM _{2.5}						
	PM ₁₀						
	TSP						
	H ₂ S						
	VOC						
	NH ₃						
		Broiler Chicken Houses	Dairy Barns (NV)	Dairy Barns (MV)	Laying Hen Houses	Swine Barns	Swine Lagoons /Basins
							Dairy Lagoons /Basins
AFO Type/Emission Source							

= Planned, not developed
 = Planned, draft developed

Source: OIG analysis.

PM_{2.5}: Particulate matter < 2.5 micrometers
 PM₁₀: Particulate matter < 10 micrometers
 TSP: Total suspended particulates

H₂S: Hydrogen Sulfide
 VOC: Volatile organic compounds
 NH₃: Ammonia

SAB Review of Draft EEMs and EPA Response

The SAB concluded that the data and methodology used to develop the draft EEMs limited the ability of the models to estimate emissions beyond the small number of AFOs in the NAEMS data set. Specifically, the SAB concluded that the number of sites monitored was too small relative to the size of the industry; the models were based on variables that did not accurately predict emissions; the EPA should not have combined swine and dairy lagoon/basin data; and there were significant limitations with the VOC data for broiler houses. Thus, the SAB recommended that the EPA not apply the current version of the EEMs beyond the AFOs in the EPA's dataset.

¹⁹ This included EEMs for both naturally ventilated (NV) and mechanically ventilated (MV) dairy barns, as discussed in the Agreement.

The SAB made a number of other recommendations, including having the EPA do the following:

- Expand its dataset by collecting data from monitoring efforts outside of the NAEMS, and using NAEMS data that were initially excluded due to the EPA's data completeness criteria.
- Not generate an EEM for VOC emissions from broiler operations based on current data limitations.
- Separate swine and dairy lagoon/basin data that had been combined for EEM development.

The SAB also advocated a process-based modeling approach to EEM development. The NAS had advocated a process-based modeling approach to estimating emissions in its 2003 report. Further, in its 2008 report, GAO recommended that the EPA establish a strategy and timetable for developing process-based emission estimating protocols for CAFOs. The SAB noted the following:

Process-based models would be more likely to be successful in representing a broad range of conditions than the current models because process-based models represent the chemical, biological and physical processes and constraints associated with emissions.

According to the Notice publishing the Agreement, the EPA believed process-based modeling to be a large and complex, multiyear research effort. Therefore, the EPA planned to develop an interim modeling approach, which would be a critical first step to developing a process-based modeling approach. The modeling approach the EPA ultimately selected for the draft EEMs used a statistical software program to analyze the various measurements taken during the NAEMS and identify those variables that predict emissions. The SAB recognized that the EPA may need to apply statistical approaches to assess emissions while it was developing and evaluating process-based models, and thus made recommendations to improve the EPA's chosen approach, as discussed above.

Prior Stakeholder Feedback Questioned the NAEMS Monitoring Approach

The SAB's concerns about the number of monitoring sites being able to support statistically based EEMs was raised in public comments on the Agreement and protocol before the EPA began developing EEMs, and was also raised by GAO in its 2008 report on the EPA's efforts to characterize AFO pollution.

After the NAEMS protocol was made available for public comment in 2005, a number of external groups expressed concerns about the study design and whether it would lead to credible scientific data. Some commenters noted that the number of

sites was too limited to account for all the differences in types of manure management systems, building types, ventilation rates, feeding practices, animal type/age, animal management practices, geography and climate. The commenters noted that even for the types of AFOs monitored, there may not be a sufficient number of samples to establish statistically valid EEMs. Similarly, in its 2008 report, GAO cautioned that the NAEMS may not supply the data needed for the EPA to develop comprehensive EEMs. Further, the GAO report stated that members of the USDA Agricultural Air Quality Task Force had raised concerns about the quality and quantity of data collected, and had pushed for the EPA to review the first 6 months of monitoring data to determine whether the study needed to be revised to yield more useful information.

According to the NAEMS Science Advisor, the NAEMS protocol could be viewed as a compromise between compliance-minded EPA, budget-minded industry, and publication-minded universities. The protocol developers decided on an approach that focused on collecting a comprehensive set of monitoring data (i.e., 2 years of monitoring many different AFO conditions and parameters) at a smaller number of sites, as opposed to collecting a smaller set of data at more sites. According to the EPA, costs were a factor in this decision because mobilizing and demobilizing equipment and then re-deploying at new sites would have depleted funds that could be used for monitoring. The protocol developers believed the chosen monitoring plan would produce sufficient data for EEM development if the selected monitoring sites represented how the majority of animals are raised in the different AFO sectors.

Although the monitoring protocol was developed as a joint effort of researchers knowledgeable about AFO operations and/or monitoring techniques, there was no comprehensive internal or external assessment to determine the amount of data needed to produce scientifically and statistically sound EEMs that could be extrapolated nationwide. The EPA did not perform such an assessment prior to the NAEMS, in part, because it did not know which variables would most impact air emissions at AFOs, and the agency wanted to see the data before selecting a modeling approach for EEM development. Also, the NAEMS protocol and detailed monitoring plans were not peer reviewed to ensure that the NAEMS would provide sufficient data for the EPA to produce a comprehensive suite of EEMs.

EPA's EEM Development Activities Since 2013 Have Been Limited

The EPA planned to continue EEM development using its statistically based approach, and had addressed some of the SAB's recommendations by acquiring additional data sets from other external studies, and reassessing data completeness criteria for the NAEMS. However, the draft EEMs that were submitted to the SAB for review had not been revised, and the EPA had not begun developing EEMs for the remaining 28 emission source and pollutant combinations.

A lack of expertise and resources slowed the agency's work on the EEMs in recent years. According to EPA managers, the agency in recent years did not have staff with combined expertise in agricultural emissions, air quality and statistical analysis. At the time the NAEMS protocol was developed, the EPA had more applicable expertise, but the key staff involved in the NAEMS protocol development retired. Further, competing priorities resulted in the EPA's Office of Air and Radiation putting the EEM effort largely on hold. The EPA had dedicated few agency resources to develop EEMs since the SAB's 2013 final report. The few remaining agency staff who worked on the NAEMS and subsequent data analysis were reassigned to other work, and the EPA stopped funding the contract for NAEMS analysis.

The EPA's most recent draft EEM development work plan, dated March 2016, provided a general framework for how the EPA intended to finish all planned EEMs. The draft plan stated that a new staff person with appropriate expertise, along with student contractor support, would complete the EEMs. The EPA hired the new staff person and a student contractor in January 2017 but had not yet finalized timeframes for completing EEM development.

AFO Air Emissions Remain Largely Uncharacterized and Important Agency Actions Are on Hold

Eleven years after the Agreement was entered, and 7 years after NAEMS monitoring was completed, the EPA, state, local and tribal permitting authorities, and AFO owners/operators, did not have scientifically defensible EEMs needed to make CAA and CERCLA/EPCRA compliance determinations. In addition, the civil enforcement protections for the approximately 14,000 AFOs that participated in the Agreement remained in effect more than 6 years after intended expiration, and several important EPA actions were on hold pending development of the EEMs.

CAA Permit and CERCLA/EPCRA Reporting Determinations Have Not Been Made

Per the Agreement, facilities were not required to determine whether CAA permitting and CERCLA/EPCRA reporting requirements apply to them until the EPA publishes final EEMs. However, once final EEMs are published, participating AFOs are required to use the EEMs to estimate their emissions and come into compliance with applicable CAA and CERCLA/EPCRA requirements.

The Agreement states that a source with emissions exceeding CAA major source permitting thresholds²⁰ would have to do one of the following:

1. Apply for and obtain a permit that contains a federally enforceable limitation or condition that limits the potential emissions to less than the applicable major source threshold for the area where the source is located.
2. Install either best available control technology in attainment areas,²¹ or lowest achievable emission rate technology in nonattainment areas;²² and then obtain a federally enforceable permit that incorporates the appropriate best available control technology or lowest achievable emission rate limit.

Delays in issuing the EEMs resulted in facilities continuing to have civil enforcement protections even if their emissions were exceeding CAA permit or CERCLA/EPCRA reporting thresholds. Given the lack of reliable EEMs, it was difficult to estimate how many facilities could be exceeding these thresholds. However, monitoring conducted as part of an EPA enforcement case in 2003 demonstrated that some large AFOs can exceed the 250-tons-per-year permitting threshold for PM emissions. That monitoring showed total PM emissions of 550 and 700 tons per year at two large egg-layer AFOs.

The NAEMS Science Advisor analyzed NAEMS data for the pork and egg-layer industries, which indicated that pork and egg-layer AFOs could frequently exceed the EPCRA reporting threshold for ammonia of 100 pounds per day. This analysis indicated that pork and egg layer AFOs were unlikely to exceed 250 tons per year of PM₁₀ or VOC emissions. However, the Science Advisor's analysis did not address whether pork or egg-layer AFOs would trigger permitting requirements in poor air quality areas where regulatory thresholds are lower.

Paragraph 38 of the Agreement required the EPA to end civil enforcement protections for those emission sources/types for which the EPA determined it was unable to develop EEMs. As described earlier, the SAB concluded in its 2013 report that the EPA did not have sufficient data to develop an EEM for VOC emissions from broiler houses. Further, more than 7 years since completion of the NAEMS, the EPA had only developed draft EEMs for eight of a possible 36 emission source and pollutant combinations. However, the EPA had not yet determined that it could not develop any of the EEMs, and thus has not waived enforcement protections for any of the emissions sources covered under the 2005 Agreement.

²⁰ Applicable regulatory thresholds range from 10 tons per year in areas with very poor air quality (called extreme nonattainment areas) to 250 tons per year in areas with adequate air quality (called attainment areas).

²¹ A geographic area is generally designated as being in attainment for a particular criteria air pollutant if the concentration of that pollutant is found to be at or below the regulated or "threshold" level for the associated National Ambient Air Quality Standard.

²² A geographic area is generally designated as being in nonattainment for a particular criteria air pollutant if the concentration of that pollutant is found to exceed the regulated or "threshold" level for the associated National Ambient Air Quality Standard.

Agency Actions on Hold

Delays in completing EEMs have also caused important agency efforts to address or mitigate AFO air emissions to remain on hold. The EPA stated it would not take the following actions until the EEMs are finalized because they are needed to inform the agency's decision-making:

Responding to citizen petitions to regulate AFOs. The EPA has received petitions to address AFO emissions in regulations beyond the current permitting CAA provisions, which include a 2009 petition to list and regulate AFOs as a source category under CAA Section 111, and a 2011 petition to regulate ammonia as a criteria pollutant under CAA Sections 108 and 109. EPA staff told us they did not plan to evaluate the need for additional regulations as laid out in these petitions until the EEMs are finalized.

Defining "source" for aggregation purposes. The aggregation of sources pertains to how many individual emission sources are counted together to determine whether a facility exceeds CAA major source status, and thus impacts how many facilities could exceed permitting thresholds. For example, if a barn at an AFO rather than the entire AFO is a "source," fewer AFOs could be impacted by CAA permitting requirements. The EPA had not issued guidance on this issue, and said it planned to do so after developing the EEMs.

In our view, final EEMs are also necessary for the EPA to develop compliance and enforcement strategies for Agreement non-participants, and to assess whether AFO emissions may contribute to disproportionate health risks to certain communities.

Conclusion

The EPA's ability to characterize and address AFO air emissions is unchanged since its 2005 Agreement with the AFO industry intended to produce reliable emissions estimation methods. As a result, individual AFOs have not estimated their emissions to determine whether they are required to implement controls to reduce emissions and/or report their emissions to the appropriate emergency responders. Additionally, other important agency actions pertaining to AFO air emission estimates continue to be on hold.

Timeframes for completing EEM development were uncertain, as staffing and contract support needed to finish EEMs only recently became available and the EPA had not yet finalized its work plan at the time we completed our review. Further, SAB concerns about the EPA's EEM development methodology have not been resolved. Despite these uncertainties, parties to the 2005 Agreement continue to receive protections from civil enforcement actions. We make recommendations in Chapters 3 and 4 of this report.

Chapter 3

EPA Needs to Implement Systematic Planning to Assure That EEMs Have Sufficient Quality

The EPA's planning for EEM development did not describe the desired level of quality needed for the EEMs' intended purpose of estimating individual AFO air emissions nationwide. The establishment of such criteria is a key component of systematic planning for agency projects. In accordance with the agency's data quality policies, EPA organizations should conduct systematic planning to ensure that projects will result in scientific products that are defensible and useful for their intended purpose. The agency's most recent EEM development draft work plan used the terms "appropriate" and "meaningful" to describe final EEM products, but did not explain how those terms would be used to evaluate the quality or acceptability of the final EEMs.

As noted in Chapter 2, the agency's SAB concluded that the EPA's 2012 draft EEMs were not suitable for their intended purpose. Consequently, if the agency does not fully implement systematic planning for future EEM development, the EPA is at risk of producing additional draft EEMs that are not sufficient for estimating air emissions at individual AFOs across the United States.

EPA Quality System

The EPA's Procedure for its Quality Policy²³ establishes management principles and responsibilities for ensuring that EPA products and services meet agency quality-related requirements, and are of sufficient quality for their intended use and support the EPA's mission to protect human health and the environment. The policy applies to agency products and services developed for external distribution or dissemination. Each EPA organization is responsible for implementing the EPA Quality Policy and Program within its organization. Requirements for implementing the program include conforming to the minimum specifications of the American National Standards Institute and the American Society for Quality Control standard, ANSI/ASQC E4-1994.²⁴

²³ EPA Chief Information Officer's CIO Order 2106-P-01.0 (October 20, 2008).

²⁴ *Specifications and Guidelines for Quality Systems for Environmental Data Collection and Environmental Technology Programs*, the American National Standards Institute and the American Society for Quality Control (1994). This standard is the basis for the EPA's Quality System.

At the project level, these minimum specifications include the following:

- Using a systematic planning approach (e.g., the data quality objectives process) to develop acceptance or performance criteria covered by the EPA Quality Policy.
- Having approved quality assurance project plans, or equivalent documents, for all applicable tasks involving environmental data.

To implement the EPA's Quality Policy, each EPA organization must develop a quality management plan that describes its quality system, documents its quality policies, and identifies the environmental programs to which the quality system applies. The EPA's Office of Air Quality Planning and Standards (OAQPS) developed a quality management plan that describes options for ensuring that OAQPS projects are of appropriate quality for their intended purpose. These options include elements of systematic planning to ensure that quality considerations are built into a product at the beginning, and consist of (1) developing a quality assurance project plan or similar document, and/or (2) conducting pre-dissemination review (e.g., peer review) of information.

According to the OAQPS quality management plan, quality documentation describes in detail the activities that must be implemented to assure that the results of work will satisfy the stated performance criteria. The performance criteria may be stated in the form of data quality objectives (DQOs). DQOs are qualitative or quantitative statements that clarify project technical and quality objectives, define the appropriate type of data, and specify tolerable levels of potential decision errors (e.g., uncertainty) that will be used as the basis for identifying the data needed to support decisions. EPA quality assurance guidance²⁵ recommends that systematic planning include DQOs when data are to be used to make a regulatory decision or emission estimations.

The DQO process is the agency's recommendation when data are to be used to make some type of decision (e.g., compliance or noncompliance with a standard) or estimation (e.g., ascertain the mean concentration level of a contaminant).

Guidance on Systematic Planning Using the Data Quality Objectives Process, EPA QA/G-4, February 2006

Further, DQOs should be specified for a project before the agency develops its plan for collecting the data, since the DQOs will drive key data collection decisions. For estimation, the guidance states that DQOs are typically expressed in terms of acceptable uncertainty (e.g., width of an uncertainty band or interval) associated with a point estimate at a desired level of statistical confidence.

²⁵ The EPA's *Guidance on Systematic Planning Using the Data Quality Objectives Process* (2006).

The OAQPS quality management plan also provides for the pre-dissemination review of OAQPS information as a way to provide assurance that quality has been built into the information that the office disseminates. The quality management plan cites peer review as an example of pre-dissemination review, and notes that it can be appropriate to incorporate the pre-dissemination review for project planning documents, such as the quality assurance project plan, prior to beginning the project.

EPA Has Not Fully Implemented a Systematic Planning Process to Assure a Desired Level of Quality for EEMs

The EPA's planning process for EEM development had yet to establish data quality objectives describing the performance or acceptance criteria for the final EEMs. While extensive planning went into assuring the quality of the monitoring data collected during the NAEMS, this planning did not describe the desired quality of the end products resulting from EPA analysis of the NAEMS data (i.e., the EEMs), or the type and extent of emissions monitoring data needed to produce EEMs of desired quality.

Planning for Draft Development of EEMs Was Not Systematic

Ideally, under a systematic planning process, a methodology for producing a final product at the desired quality is determined up front. This methodology then drives the data collection efforts. When data are to be used to make some type of decision or estimation, the EPA recommends that the desired level of quality be expressed in the form of DQOs. As noted in Chapters 1 and 2, the EPA collaborated with external scientists to develop the monitoring protocol. However, several factors influenced the scope of the NAEMS, and that effort was not specifically designed to produce data to satisfy acceptance criteria for the EEMs. Among these factors was that, prior to the study, the EPA did not know which variables most impact air emissions at AFOs. Thus, the EPA tried to create an EEM development methodology using the data that was available from the NAEMS.

Unless some form of planning is conducted prior to investing the necessary time and resources to collect data, the chances can be unacceptably high that these data will not meet specific project needs.

Guidance on Systematic Planning Using the Data Quality Objectives Process, EPA QA/G-4, February 2006

The NAEMS protocol stated that the NAEMS and subsequent data analyses and interpretation would allow the EPA and livestock and poultry producers to “reasonably determine” which AFOs were subject to CAA regulatory provisions and CERCLA/EPCRA reporting requirements. However, as part of its planning, the EPA did not define what was meant by “reasonably determine.” The EPA developed a quality assurance project plan for its efforts to develop the draft EEMs that were published in 2012, but it focused on assessing the quality of incoming data from the NAEMS and other sources. The quality assurance project

plan did not include DQOs or other performance criteria defining the acceptable level of uncertainty for EEM predictions, or the quality control measures the EPA would use to assure its statistical models were scientifically and statistically sound.

The EPA had its draft EEMs peer reviewed by the SAB, but the agency did not involve the SAB in its planning process to ensure that the NAEMS would provide sufficient data for EEM development. As discussed in Chapter 2, the SAB concluded that the EPA's draft EEMs were not useful for making compliance determinations nationwide due to problems with the underlying data and analysis.

Plans for Completing Development of EEMs Can Be Strengthened

The EPA had not yet conducted systematic planning for the EEM completion effort, but had developed a draft work plan. That draft work plan contained little information about systematic planning to assure the quality of future EEMs. The plan did not address whether a quality assurance project plan would be developed, or commit to peer review of the planned methodology or the draft or final EEMs.²⁶

The draft work plan described a future scoping study that would allow the EPA to plan activities and resources for developing "appropriate" EEMs, and stated that EEMs developed in the future would be tested to determine whether they can reproduce "meaningful" emissions estimates. However, the work plan did not define or establish acceptance criteria for "appropriate" or "meaningful" EEMs. Staff from OAQPS stated that they planned to make quality planning decisions once the new staff person had been hired to conduct the scoping study and subsequent EEM development.

Conclusion

As explained in the EPA's quality assurance guidance, systematic planning that defines the level of quality required for an end product should be conducted prior to data collection efforts, to reduce the risk that the data collected is not sufficient. Such planning for the EEMs was not conducted prior to the NAEMS or draft EEM development efforts, in part, because the EPA did not have a full understanding of the factors that influence AFO air emissions. Further, the NAEMS protocol and monitoring plans were not developed exclusively to provide data needed for EEM development. Based on its experience and peer review feedback in developing the initial set of draft EEMs, the EPA should be in a better position to conduct systematic planning for the EEM completion effort.

²⁶ In the draft plan, the EPA stated it will provide developed EEMs to "appropriate stakeholders and possibly the Science Advisory Board" for review, and then modify the EEMs based on comments received. However, the plan does not commit to obtaining independent, external peer review of the EEMs or the planned methodology that will be used to develop the EEMs.

Without adequate systematic planning, the EPA is at risk of spending additional time and resources to develop EEMs that still are not sufficient for estimating AFO emissions nationwide.

Recommendations

We recommend that the Assistant Administrator for Air and Radiation:

1. In accordance with EPA quality assurance guidance, conduct comprehensive systematic planning for future emission estimating methodology development through either the quality assurance project plan or pre-dissemination review processes.
 - If the EPA chooses to develop a quality assurance project plan, it should first develop data quality objectives for the emission estimating methodologies.
 - If the EPA chooses to conduct a pre-dissemination review, it should obtain independent, external feedback on the adequacy of its emission estimating methodologies development and plans prior to beginning the project.
2. Based on the results of systematic planning, determine and document the decision as to whether the EPA is able to develop scientifically and statistically sound emission estimating methodologies for each originally planned emission source and pollutant combination.
3. For the emission source and pollutant combinations for which the Office of Air and Radiation determines it can develop scientifically and statistically sound emission estimating methodologies, establish public milestone dates for issuing each draft emission estimating methodology. For any emission source and pollutant combinations for which the Office of Air and Radiation determines that it cannot develop scientifically and statistically sound emission estimating methodologies, notify the Office of Enforcement and Compliance Assurance of that determination.

We recommend that the Assistant Administrator for Enforcement Compliance and Assurance:

4. For any emission source and pollutant combinations for which the Office of Air and Radiation determines it cannot develop emission estimating methodologies, notify Air Compliance Agreement participants of this determination, and that the release and covenant not to sue for those emission sources and pollutant types will expire in accordance with paragraph 38 of the 2005 Air Compliance Agreement.

Agency Response and OIG Evaluation

The Office of Air and Radiation agreed with Recommendations 1, 2 and 3, and provided acceptable planned corrective actions and completion dates. The Office of Enforcement and Compliance Assurance agreed with Recommendation 4 and provided an acceptable corrective action plan.

The agency also provided technical comments that were incorporated into our final report as appropriate. Appendices A and B contain the responses to our report from the Office of Air and Radiation, and the Office of Enforcement and Compliance Assurance, respectively.

Chapter 4

EPA Has Not Updated Some Stakeholders and Public on Current Status of EEM Efforts

The 2005 Air Compliance Agreement between the AFO industry and the EPA generated significant stakeholder and public interest in AFO air emissions, and any actions the agency would take to address those emissions. Leading up to the monitoring study, and for 2 years after monitoring data was available, the EPA provided frequent public updates related to the NAEMS and EEMs. However, since the SAB's 2013 final report, the agency had provided only high-level updates to selected stakeholders. This left many stakeholders and the public uninformed about the current status of the work, the reasons for delays, and current timelines for finalizing the EEMs. The EPA should resume providing public updates on the status of EEM development through its website or other public means, to ensure the transparency of its process and accountability in setting completion dates.

EPA Provided Extensive Public Outreach During Early Stages

The EPA issued four press releases in 2006 announcing individual agreements entered into between the EPA and AFOs. Further, in the years after it received all monitoring data in 2010, the EPA provided frequent updates on EEM development efforts and the SAB's review of draft EEMs. In 2011, the EPA published data from the NAEMS monitoring, issued a Call for Information to collect information to supplement the NAEMS data, and updated the public on processes related to the planned SAB review. In 2012, the EPA released its draft EEMs for public comment.

EPA Has Not Publicly Communicated on EEM Development Efforts Since 2013

Since the EPA posted the SAB's 2013 final report on its public website, the EPA had not updated some stakeholders and the public on recent aspects of its NAEMS data analysis and EEM development efforts. An OAQPS manager told us that the agency planned to post final EEMs on its public webpage, but used other mechanisms to provide updates on the status of EEM development. Such updates were provided only upon request, and typically to groups with which the agency had regular contact, such as the USDA's Agricultural Air Quality Task Force. Numerous interested parties—including the SAB Chair, a SAB panel member, and three external groups—told us that they had no information about the ongoing NAEMS data analysis, the reasons for delays, or how long it might take the EPA to publish final EEMs.

Further, staff at the USDA told us that while they periodically received high-level updates from the EPA at Agricultural Air Quality Task Force and intra-agency

workgroup meetings, they were not aware of the EPA's current plans for completing EEM development. The EPA's 2016 update to the Agricultural Air Quality Task Force provided the SAB's recommendations regarding the draft EEMs, as previous updates had done, and stated that the EPA will continue developing EEMs to account for air emissions from AFOs.

Conclusion

Despite being years behind schedule in finalizing the EEMs, the EPA has not provided public updates since 2013 on the NAEMS data analysis and the agency's current efforts to finalize the EEMs. Thus, stakeholders and the public do not know where the EPA currently stands with respect to EEM development. To ensure transparency and accountability in completing EEMs for the \$15 million investment in the NAEMS study, the EPA should provide public updates on the status of EEM development and establish public milestones for completion of each draft EEM.

Recommendation

We recommend that the Assistant Administrator for Air and Radiation:

5. Provide the public with the status of emission estimating methodology development and the agency's planned next steps for analyzing the National Air Emissions Monitoring Study data and finalizing the emission estimating methodologies, including the completion of milestone dates for each draft emission estimating methodology it plans to develop.

Agency Response and OIG Evaluation

The Office of Air and Radiation agreed with Recommendation 5, and provided an acceptable corrective action plan and completion date. The Office of Air and Radiation also provided technical comments that were incorporated into our final report as appropriate. Appendix A contains the Office of Air and Radiation's response to our report.

Status of Recommendations and Potential Monetary Benefits

RECOMMENDATIONS

Rec. No.	Page No.	Subject	Status ¹	Action Official	Planned Completion Date	Potential Monetary Benefits (in \$000s)
1	23	In accordance with EPA quality assurance guidance, conduct comprehensive systematic planning for future emission estimating methodology development through either the quality assurance project plan or pre-dissemination review processes. <ul style="list-style-type: none"> o If the EPA chooses to develop a quality assurance project plan, it should first develop data quality objectives for the emission estimating methodologies. o If the EPA chooses to conduct a pre-dissemination review, it should obtain independent, external feedback on the adequacy of its emission estimating methodologies development and plans prior to beginning the project. 	R	Assistant Administrator for Air and Radiation	3/31/18	
2	23	Based on the results of systematic planning, determine and document the decision as to whether the EPA is able to develop scientifically and statistically sound emission estimating methodologies for each originally planned emission source and pollutant combination.	R	Assistant Administrator for Air and Radiation	6/30/18	
3	23	For the emission source and pollutant combinations for which the Office of Air and Radiation determines it can develop scientifically and statistically sound emission estimating methodologies, establish public milestone dates for issuing each draft emission estimating methodology. For any emission source and pollutant combinations for which the Office of Air and Radiation determines that it cannot develop scientifically and statistically sound emission estimating methodologies, notify the Office of Enforcement and Compliance Assurance of that determination.	R	Assistant Administrator for Air and Radiation	6/30/18	
4	23	For any emission source and pollutant combinations for which the Office of Air and Radiation determines it cannot develop emission estimating methodologies, notify Air Compliance Agreement participants of this determination, and that the release and covenant not to sue for those emission sources and pollutant types will expire in accordance with paragraph 38 of the 2005 Air Compliance Agreement.	R	Assistant Administrator for Enforcement and Compliance Assurance	9/30/18 ²	
5	26	Provide the public with the status of emission estimating methodology development and the agency's planned next steps for analyzing the National Air Emissions Monitoring Study data and finalizing the emission estimating methodologies, including the completion of milestone dates for each draft emission estimating methodology it plans to develop.	R	Assistant Administrator for Air and Radiation	6/30/18	

¹ C = Corrective action completed.
R = Recommendation resolved with corrective action pending.
U = Recommendation unresolved with resolution efforts in progress.

² If applicable, based on the Office of Air and Radiation's determination in response to Recommendation 3.

Office of Air and Radiation Response to Draft Report




UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
WASHINGTON, D.C. 20460

JUN 23 2017

OFFICE OF
AIR AND RADIATION

MEMORANDUM

SUBJECT: Response to the Office of Inspector General's Draft Report, *Emissions From Animal Feeding Operations Remain Largely Uncharacterized More Than 7 Years After Study Completed* (Project No. OPE-FY16-0018)

FROM: Sarah Dunham 
Acting Assistant Administrator

TO: Carolyn Copper
Assistant Inspector General
Office of Program Evaluation
Office of Inspector General

The EPA's Office of Air and Radiation (OAR) appreciates the opportunity to review and comment on the Office of Inspector General (OIG) draft report titled "*Emissions From Animal Feeding Operations Remain Largely Uncharacterized More Than 7 Years After Study Completed.*" OAR agrees in general with the OIG's recommendations.

OAR's current task is the development of Emissions Estimating Methodologies (EEMs) for animal feeding operations (AFOs), using statistically-based methodologies to develop emissions factors for select types of AFOs from data collected through the National Air Emissions Monitoring Study (NAEMS). In partnership with the Office of Research and Development (ORD), we are undertaking this effort and incorporating a National Academy of Sciences (NAS) recommendation that the EPA develop an interim method for estimating emissions while we participate in a longer-term effort to develop process-based EEMs. In addition, our work will include objectives outlined in the 2005 Air Compliance Agreement (Agreement) the EPA entered into with participating AFOs. The AFO sectors represented in the Agreement covered the monitoring study costs. Individual participating AFOs did not directly pay monitoring study funds. The EPA remains committed to fulfilling this goal of developing EEMs for AFOs based on scientifically and statistically sound methods. The

statistically-based EEMs must also be easily implemented by the agricultural community and other users, and be based on non-proprietary inputs.

While we generally agree with your characterizations of the Agreement and the associated NAEMS, there are a few places where information in the draft report is slightly unclear where the information differs from our understanding of specific facts. Please refer to the attached list of these instances and suggested revisions intended to help clarify and improve the draft report's accuracy.

Below are OAR's responses to the OIG's specific recommendations (recommendation numbers 1, 2, 3 and 5), which we developed in consultation with ORD. On June 9, 2017, OECA provided a separate response to recommendation number 4 as it is assigned to their office. In the attached technical comments, we provide suggested additional detailed changes in the form of a markup.

Recommendation 1: In accordance with EPA quality assurance guidance, conduct comprehensive systematic planning for future emission estimating methodology development through either the quality assurance project plan or pre-dissemination review processes.

- **If the EPA chooses to develop a quality assurance project plan, it should first develop data quality objectives for the emission estimating methodologies.**
- **If the EPA chooses to conduct a pre-dissemination review, it should obtain independent, external feedback on the adequacy of its emission estimating methodologies development and plans prior to beginning the project.**

Response 1: OAR and ORD agree with this recommendation and have initiated development of a quality assurance project plan (QAPP) for evaluation of the data and completion of the EEMs. As part of the QAPP development, appropriate data quality objectives will be defined. We intend to make this document publicly available on our website (see below).

Planned completion date: FY 2018, Q2 (March).

Recommendation 2: Based on the results of systematic planning, determine and document the decision as to whether the EPA is able to develop scientifically and statistically sound emission estimating methodologies for each originally planned emission source and pollutant combination.

Response 2: OAR agrees with this recommendation. As noted, completion of this task is contingent upon the results and decisions made during the QAPP development. Upon completion of the QAPP, OAR and ORD will determine which EEMs can be completed and the appropriate schedules for their completion. We intend to make the schedules publicly available on our website (see below).

Planned Completion Date: As stated above, development of the QAPP is ongoing with completion anticipated in the second quarter of FY 2018. Upon completion of the QAPP, decisions

on EEM development and schedules will be determined and transmitted to the Office of Enforcement and Compliance Assurance (OECA). We anticipate that the schedules will be established in third quarter of FY 2018.

Recommendation 3: For the emission source and pollutant combinations for which the Office of Air and Radiation determines it can develop scientifically and statistically sound emission estimating methodologies, establish public milestone dates for issuing each draft emission estimating methodology. For any emission source and pollutant combinations for which the Office of Air and Radiation determines that it cannot develop scientifically and statistically sound emission estimating methodologies, notify the Office of Enforcement and Compliance Assurance of that determination.

Response 3: OAR agrees with this recommendation and will develop a schedule for completion of the EEMs after completion of data review and QAPP development, which is currently planned for completion in the second quarter of FY 2018.

Planned Completion Date: As stated above, development of the QAPP is ongoing with completion anticipated in the second quarter of FY 2018. Upon completion of the QAPP, decisions on EEM development and schedules will be determined and transmitted to OECA and made available to the public. We anticipate that the schedules will be established in the third quarter of FY 2018.

Recommendation 5: Provide the public with the status of emission estimating methodology development and the agency's planned next steps for analyzing the National Air Emissions Monitoring Study data and finalizing the emission estimating methodologies, including the completion milestone dates for each draft emission estimating methodology it plans to develop.

Response 5: OAR agrees with this recommendation and will post the schedule on our website for completion of the EEMs after completion of data review and QAPP development, which is currently planned for completion in the second quarter of FY 2018. We anticipate providing updates on our progress with subsequent website postings.

Planned Completion Date: As stated above, development of the QAPP is ongoing with completion anticipated in the second quarter of FY 2018. Upon completion of the QAPP, decisions on EEM development and schedules will be determined and milestones will be made available to the public. We anticipate that the schedules will be established in the third quarter of FY 2018.

If you have any questions regarding this response, please contact Mike Jones, Office of Air Quality Planning and Standards (OAQPS) Audit Liaison, at (919) 541-0528.

Attachment

Office of Enforcement and Compliance Assurance Response to Draft Report




UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
WASHINGTON, D.C. 20460

JUN - 9 2017

OFFICE OF
ENFORCEMENT AND
COMPLIANCE ASSURANCE

MEMORANDUM

SUBJECT: Response to the Office of Inspector General Draft Report: "Emissions from Animal Feeding Operations Remain Largely Uncharacterized More Than 7 Years After Study Completed." Project No. OPE-FY16-0018 (May 12, 2017)

FROM: Lawrence E. Starfield 
Acting Assistant Administrator
Office of Enforcement and Compliance Assurance

TO: Carolyn Copper
Assistant Inspector General
Office of Program Evaluation
Office of Inspector General

Thank you for the opportunity to respond to the Office of Inspector General (OIG) Draft Report, "Emissions from Animal Feeding Operations Remain Largely Uncharacterized More Than 7 Years After Study Completed" (Draft Report). The Office of Enforcement and Compliance Assurance (OECA) appreciates OIG's careful examination of this issue, and we are committed to following the terms of the Animal Feeding Operations (AFO) Air Compliance Agreement (Agreement) and OIG's recommendation for OECA – Recommendation Number 4. We concur with Recommendation Number 4, and we provide a high-level intended corrective action with an estimated completion date below.

While we generally agree with your characterizations of the Agreement and its associated National Air Emissions Monitoring Study (NAEMS), there are a few places where the Draft Report is slightly unclear or where the information differs from our understanding of specific facts. Enclosed for your consideration, we include a list of these instances and suggested revisions intended to help clarify and improve the Draft Report's accuracy.

OECA has discussed the Draft Report with the Office of Air and Radiation (OAR) and we understand that OAR will be providing a separate response addressing the Draft Report's findings and recommendations for OAR – Recommendation Numbers 1, 2, 3, and 5.

OECA Response to Recommendation Number 4 – Concur

No.	Recommendation	High-Level Intended Corrective Action	Planned Completion Date
4	For any emission source and pollutant combinations for which the Office of Air and Radiation determines it cannot develop emission estimating methodologies, notify Air Compliance Agreement participants of this determination and that the release and covenant not to sue for those emission sources and pollutant types will expire in accordance with paragraph 38 of the 2005 Air Compliance Agreement.	If the EPA determines it cannot develop emission estimating methodologies for any emission source and pollutant combinations, OECA will notify Agreement participants in writing that the EPA has made such a determination and that the release and covenant not to sue will expire in accordance with paragraph 38 of the Agreement.	If necessary, OECA will complete the intended corrective action within 60 days of OAR finalizing its determination.

We concur with OIG's recommendation that OECA notify Agreement participants if OAR determines that it cannot develop emission estimating methodologies for any emission source and pollutant combinations. OECA notes that this recommendation will only require a corrective action if OAR determines it cannot develop emission estimating methodologies for any source and pollutant combinations. Paragraph 38 of the Agreement requires the EPA to notify Agreement participants in writing if the Agency makes such a determination. OECA intends to continue abiding by the Agreement's terms, and we will notify Agreement participants if the Agency determines it cannot develop emission estimating methodologies for any emission source and pollutant combinations.

If you have any questions regarding this response, please contact OECA Audit Liaison, Gwendolyn Spriggs, at 202.564.2439.

Attachment

cc: Susan Shinkman, OECA/OCE
 Rosemarie Kelley, OECA/OCE
 Lauren Kabler, OECA/OCE
 Apple Chapman, OECA/OCE
 Tim Sullivan, OECA/OCE

Gwendolyn Spriggs, OECA/OAP
Sarah Dunham, OAR
Robin Dunkins, OAR/OAQPS
Mike Jones, OAR/OAQPS

Distribution

The Administrator
Chief of Staff
Chief of Staff for Operations
Deputy Chief of Staff for Operations
Assistant Administrator for Air and Radiation
Assistant Administrator for Enforcement and Compliance Assurance
Agency Follow-Up Official (the CFO)
Agency Follow-Up Coordinator
General Counsel
Associate Administrator for Congressional and Intergovernmental Relations
Associate Administrator for Public Affairs
Career Deputy Assistant Administrator, Office of Air and Radiation
Deputy Assistant Administrator, Office of Enforcement and Compliance Assurance
Audit Follow-Up Coordinator, Office of the Administrator
Audit Follow-Up Coordinator, Office of Air and Radiation
Audit Follow-Up Coordinator, Office of Enforcement and Compliance Assurance

Message

From: Emily A. Miller [eamiller@fwwatch.org]
Sent: 10/26/2021 3:02:30 PM
To: Regan, Michael [Regan.Michael@epa.gov]
CC: Tarah Heinzen [theinzen@fwwatch.org]; Brent Newell [bnewell@publicjustice.net]; Hannah Connor [HConnor@biologicaldiversity.org]; Abel Russ [aruss@environmentalintegrity.org]; Cristina Stella [cstella@aldf.org]; Larissa Liebmann [lliebmann@aldf.org]; Amy van Saun [AvanSaun@CenterforFoodSafety.org]; Kristina Sinclair [kSinclair@CenterforFoodSafety.org]
Subject: Petition to End Animal Feeding Operation Air Consent Agreement
Attachments: 2021.10.26 Petition re 2005 Air Consent Agreement.pdf

Administrator Regan:

Attached, and at the following link, please find a petition from 24 organizations to rescind the Air Consent Agreement and enforce clean air laws against animal feeding operations: <https://www.foodandwaterwatch.org/wp-content/uploads/2021/10/2021.10.26-Petition-re-2005-Air-Consent-Agreement-1.pdf>.

Thank you for your consideration.

Sincerely

Emily Miller
Staff Attorney
Food & Water Watch
1616 P St. NW, Suite 300
Washington, DC 20036
eamiller@fwwatch.org
(202) 683-2500

BEFORE THE UNITED STATES
ENVIRONMENTAL PROTECTION AGENCY

ANIMAL LEGAL DEFENSE FUND, BUFFALO RIVER WATERSHED ALLIANCE (ARKANSAS), CENTER FOR BIOLOGICAL DIVERSITY, CENTER FOR FOOD SAFETY, CENTER ON RACE, POVERTY, & THE ENVIRONMENT (CALIFORNIA), CLEAN WATER FOR NORTH CAROLINA (NORTH CAROLINA), EARTHJUSTICE, ENVIRONMENTAL INTEGRITY PROJECT, FARM AID, FRIENDS OF THE EARTH, FRIENDS OF FAMILY FARMERS (OREGON), FRIENDS OF TOPPENISH CREEK (WASHINGTON), FOOD ANIMAL CONCERNS TRUST, FOOD & WATER WATCH, GOVERNMENT ACCOUNTABILITY PROJECT, HUMANE SOCIETY OF THE UNITED STATES, IOWA CITIZENS FOR COMMUNITY IMPROVEMENT (IOWA), INSTITUTE FOR AGRICULTURE & TRADE POLICY, JOHNS HOPKINS CENTER FOR A LIVABLE FUTURE, NORTH CAROLINA CONSERVATION NETWORK (NORTH CAROLINA), PUBLIC JUSTICE, SOCIALLY RESPONSIBLE AGRICULTURE PROJECT, SOUTHERN ENVIRONMENTAL LAW CENTER, AND WATERKEEPER ALLIANCE

Petitioners,

v.

MICHAEL REGAN, ADMINISTRATOR,
UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

Respondent.

PETITION TO RESCIND THE AIR CONSENT AGREEMENT
AND ENFORCE CLEAN AIR LAWS AGAINST ANIMAL FEEDING OPERATIONS

TABLE OF CONTENTS

I. INTRODUCTION	1
II. AIR POLLUTION FROM AFOs HAS SERIOUS HEALTH IMPACTS ON SURROUNDING COMMUNITIES.....	2
III. THE AIR CONSENT AGREEMENT SHIELDS AFOs FROM EPA ENFORCEMENT ACTIONS.	5
A. Rather than Enforce the Law, EPA Worked with Industry to Craft the Air Consent Agreement.	5
B. The Air Consent Agreement Provided a Safe Harbor from Enforcement of Federal Law Pending the Finalization of EEMs.....	6
C. The Environmental Appeals Board and the D.C. Circuit Court of Appeals Allowed EPA to Implement the Air Consent Agreement.....	8
D. EPA Has Relied On The Air Consent Agreement To Deny Petitions To Regulate Air Emissions from AFOs.	10
IV. EPA’S MONITORING STUDY WAS FLAWED, UNDERMINING EPA’S ABILITY TO DEVELOP VALID EEMs.....	12
A. EPA Limited the Size and Geographic Scope of its Study, Despite the Entry of Nearly 14,000 AFOs into the Agreement.....	12
B. EPA Failed to Generate Adequate Data to Develop EEMs.....	15
C. EPA Failed to Finalize EEMs Following the Completion of NAEMS.	17
D. EPA Has Failed to Consider Available Information from Peer-Reviewed Studies.	18
E. The 2017 OIG Report Urged EPA to Either Finalize the EEMs or End the Agreement. .	20
V. EPA SHOULD TERMINATE THE AIR CONSENT AGREEMENT BECAUSE EPA HAS FAILED TO PRODUCE VALID EEMs.....	23
A. EPA Should Abandon the Fundamentally Flawed NAEMS and EEMs Development Process in Favor of Existing Models.....	23
B. EPA Overstates the Difficulty of Developing Process-Based Models, Which the Agency Is Already Using in Other Contexts.	25
VI. IF EPA DECIDES TO PROCEED WITH THE FLAWED EEM DEVELOPMENT PROCESS, IT MUST IMMEDIATELY RESCIND THE SAFE HARBOR PROVISION. 29	
A. EPA Should Immediately Rescind the Safe Harbor Provisions of the Air Consent Agreement.	29
B. EPA Should Not Finalize Any EEMs Without Robust Public Participation.	29
VII. CONCLUSION	32

I. INTRODUCTION

Rural communities deserve a safe, prosperous, and plentiful food system rooted in dignity and respect. In this system, Black, Indigenous, Latino, Asian, and white communities enjoy clean land, air, and water where independent family farms and renewable energy build diversified, local, and thriving rural economies. Sadly, past administrations have prioritized the interests of corporate-controlled industrial agriculture over the well-being of rural communities. Corporate integrators, trade groups, and other powerful titans of industry, have flourished while communities and farmers have suffered through years of pollution, hollowed out Main Streets, and declining economic opportunities. This has led to what any neutral observer would decry as undemocratic oppression and exploitation. Our government has the duty and authority to protect the health and well-being of our communities by enforcing federal air pollution laws, which do not exempt this industrial system.

Over sixteen years ago, the Environmental Protection Agency (EPA), under the President George W. Bush administration, announced an Agreement and Final Order it had secretly negotiated with the National Pork Producers Council. In the agreement, EPA refrained from enforcing key air pollution control and public disclosure laws against any animal feeding operation (AFO) that agreed to pay a nominal penalty to fund a nationwide air monitoring program to establish Emission Estimating Methodologies (EEMs) for AFOs.¹ Nearly 14,000 AFOs signed up for this sweetheart deal, known as the Air Consent Agreement. By its own terms, this deal should have been completed over a decade ago, in 2010.² Yet, as of the date of this letter, EPA has yet to finalize *any* EEMs or end the Air Consent Agreement. As a result of EPA's protracted delay, thousands of the nation's largest AFOs continue to enjoy protection from EPA enforcement actions, even if their emissions exceed permit limits or reporting thresholds. EPA's implementation of the Air Consent Agreement over the past three presidential administrations demonstrates a complete, bipartisan abdication of EPA's enforcement authority.

¹ Notice of Animal Feeding Operation Consent Agreement & Final Order, 70 Fed. Reg. 4957 (Jan. 31, 2005) [hereinafter 2005 Notice]; *see also id.* at 4962 Appendix 1: Air Consent Agreement [hereinafter 2005 Air Consent Agreement].

² EPA OIG, IMPROVING AIR QUALITY: ELEVEN YEARS AFTER AGREEMENT EPA HAS NOT DEVELOPED RELIABLE EMISSIONS ESTIMATION METHODS TO DETERMINE WHETHER ANIMAL FEEDING OPERATIONS COMPLY WITH CLEAN AIR ACT AND OTHER STATUTES, Report No. 17-P-0396, at 5 (Sept. 19, 2017) [hereinafter 2017 OIG REPORT], available at https://www.epa.gov/sites/default/files/2017-09/documents/epaoig_20170919-17-p-0396.pdf.

Pursuant to the right to petition the government provided in the First Amendment to the U.S. Constitution³ and the Administrative Procedure Act,⁴ Petitioners formally submit this petition to EPA to put an end to the enforcement amnesty. The Petitioners collectively represent millions of citizens from across the United States, including many individuals adversely impacted by CAFO air pollution in their communities.

We request your written response regarding this unacceptable dereliction of duty within **30 days** of receiving this Petition. We ask that you rescind the Air Consent Agreement, take all actions consistent with President Biden's executive orders to enforce all applicable laws against AFOs, and prioritize environmental justice in enforcement and climate actions. If you instead wish to continue the policies of the past three administrations, please set forth the reasons for refusing to grant this petition.

II. AIR POLLUTION FROM AFOs HAS SERIOUS HEALTH IMPACTS ON SURROUNDING COMMUNITIES.

Air pollution is the largest environmental mortality risk factor in the United States, and agriculture—particularly industrial animal production—is a major contributor to reduced air quality.⁵ According to a recent study published in the Proceedings of the National Academy of Sciences of the United States (PNAS), air pollution from U.S. agriculture includes direct emissions of fine particulate matter (PM_{2.5}) and PM_{2.5} precursors such as ammonia (NH₃), nitrogen oxides (NO_x), sulfur dioxide (SO₂), and volatile organic compounds (VOCs).⁶ This pollution causes 17,900 U.S. deaths per year, with 15,900 deaths from food production and 2,000 deaths linked to nonfood products.⁷ Of the 15,900 deaths from food production, 80 percent, or 12,700 deaths, are attributable to industrial animal production, with the remaining 20 percent

³ U.S. CONST. amend. I.

⁴ 5 U.S.C. 553(e).

⁵ J. Stanaway et al., *Global, Regional, & National Comparative Risk Assessment of 84 Behavioural, Environmental, & Occupational, And Metabolic Risks or Clusters of Risks For 195 Countries & Territories, 1990-2017*, 392 LANCET 1923 (2018), <https://www.thelancet.com/action/showPdf?pii=S0140-6736%2818%2932225-6>; J. Lelieveld et al., *The Contribution Of Outdoor Air Pollution Sources To Premature Mortality On A Global Scale*, 525 NATURE 367 (2015); S. Bauer et al., *Significant Atmospheric Aerosol Pollution Caused By World Food Cultivation*, 43 GEOPHYS. RES. LETT. 5394 (2016), <https://agupubs.onlinelibrary.wiley.com/doi/epdf/10.1002/2016GL068354>.

⁶ N. Domingo et al., *Air Quality-Related Health Damages of Food*, 118 PNAS e2013637118, 1 (2021), <https://www.pnas.org/content/pnas/118/20/e2013637118.full.pdf>.

⁷ *Id.*

attributable to plant-based foods.⁸ The majority of deaths—12,400 deaths each year—are attributable to ammonia acting as a PM_{2.5} precursor.⁹ The study noted that on-farm emission reduction interventions, such as improved livestock waste management and fertilizer application practices, combined with dietary shifts toward more plant-based foods, could dramatically reduce the number of mortalities caused by this industry.¹⁰

Another recent study found that poultry AFOs in Pennsylvania were a major risk factor for pneumonia.¹¹ The authors observed that “[e]xposure to air pollutants such as particulate matter . . . reduc[es] the lung’s defenses against bacterial pathogens, thereby increasing susceptibility to respiratory infections.”¹² In addition, the authors also noted that

As a source of air pollution, industrial food animal production can compromise respiratory health. These large, homogeneous, densely packed livestock operations emit particulate matter, endotoxins, and other pollutants, which spread downwind through ventilation fans and emissions from decomposing manure. Adverse effects on lung function and increased respiratory symptoms have been reported among individuals living near [industrial food animal production], particularly among susceptible groups.

The study found a 66 percent increase in the odds of being diagnosed with community-acquired pneumonia among people living closest to high-density poultry operations, demonstrating that “residing closer to more and larger poultry operations was associated with [community-acquired pneumonia], a cause of significant morbidity and mortality.”¹³

EPA is culpable for many of these deaths and illnesses. For nearly two decades, EPA’s sustained approach of ignoring pollution generated by the AFO industry under the guise of the Air Consent Agreement has resulted in the emission of significant amounts of unchecked air pollution, including ozone, PM_{2.5}, nitrogen oxides, sulfur dioxide, and VOCs—pollutants that EPA is required to regulate under the Clean Air Act (CAA). To make matters worse, during this

⁸ *Id.* at 2.

⁹ *Id.* at 1.

¹⁰ *Id.*

¹¹ M. Poulsen et al., *High-Density Poultry Operations & Community-Acquired Pneumonia in Pennsylvania*, 2 ENV’T. EPIDEMIOLOGY e013 (June 2018), https://journals.lww.com/environepidem/Fulltext/2018/06000/High_density_poultry_operations_and.5.aspx.

¹² *Id.* at 1.

¹³ *Id.* at 6.

same period EPA moved to exempt the industry from having to comply with two critical pollution reporting statutes: the Emergency Planning and Community Right to Know Act (EPCRA), and the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA),¹⁴ resulting in reduced public access to the information that affected communities need to protect themselves, and likely in turn contributing to greater mortality in communities surrounding these operations.

In 2013, scientists at John Hopkins University analyzed the practical public health impacts of EPA's efforts to limit public access to information about pollution from AFOs.¹⁵ As the authors summarized:

Despite literature associating AFOs with compromised air quality and residential proximity to AFOs with adverse health outcomes, availability of information concerning AFO airborne hazardous releases ranged from limited to nonexistent across the states that we examined These data gaps compromise the ability of public health officials and scientists to characterize exposures and risks, and limit their ability to implement and evaluate interventions when appropriate. The lack of data also means that information on AFO hazardous releases is not available to residents of affected communities.¹⁶

EPA's failure to address harmful emissions, compounded by its efforts to keep citizens in the dark about AFO pollution, has contributed to serious public health impacts.

¹⁴ CERCLA/EPCRA Administrative Reporting Exemption for Air Releases of Hazardous Substances from Animal Waste at Farms, 73 Fed. Reg. 76,948 (Dec. 18, 2008) (exempting airborne hazardous releases from animal waste at farms (including AFOs) from CERCLA and EPCRA reporting requirements); *Waterkeeper Alliance v. EPA*, 853 F.3d 527, 537–38 (D.C. Cir. 2017) (vacating EPA's 2008 rule and rejecting EPA's argument that the reporting requirements serve no regulatory purpose); Vacatur Response—CERCLA/EPCRA Administrative Reporting Exemption for Air Releases of Hazardous Substances From Animal Waste at Farms; FARM Act Amendments to CERCLA Release Notification Requirements, 83 Fed. Reg. 37444 (Aug. 1, 2018) (incorporating revisions enacted by the FARM Act, which exempts farms from CERCLA release reporting requirements, despite the D.C. Circuit's vacatur of the 2008 final rule in *Waterkeeper Alliance v. EPA*); Amendment to Emergency Release Notification Regulations on Reporting Exemption for Air Emissions from Animal Waste at Farms; Emergency Planning and Community Right to Know Act 84 Fed. Reg. 27,533 (June 13, 2019) (adding the reporting exemption for air emissions from animal waste at farms provided in section 103(e) of CERCLA); see also EPA, *CERCLA & EPCRA Reporting Requirements for Air Releases of Hazardous Substances from Animal Waste at Farms*, EPA (last visited Oct. 21, 2021), <https://www.epa.gov/epcra/cercla-and-epcra-reporting-requirements-air-releases-hazardous-substances-animal-waste-farms>.

¹⁵ T. Smith et al., *Availability of Information about Airborne Hazardous Releases from AFOs*, 8 PLOS ONE e85342 (2013), <https://doi.org/10.1371/journal.pone.0085342>.

¹⁶ *Id.* at 7.

III. THE AIR CONSENT AGREEMENT SHIELDS AFOs FROM EPA ENFORCEMENT ACTIONS.

A. Rather than Enforce the Law, EPA Worked with Industry to Craft the Air Consent Agreement.

In the early 2000s, after years of dereliction by AFO operators of their obligation to seek CAA permits and report emissions under CERCLA and EPCRA, EPA took a series of legal actions designed to bring delinquent AFOs into the CAA permitting program.¹⁷ Those legal actions constitute the last time EPA meaningfully enforced the CAA against AFO polluters.

Instead of continuing to use litigation or other comparable methods to move AFOs into compliance with their obligations under the CAA, EPA spent three years crafting a backroom deal with representatives of the pork industry, egg producers, and other AFO industry groups for a “safe harbor” against enforcement in the form of a release and covenant not to sue for potential violations of the CAA, CERCLA, and EPCRA. As outlined in a memorandum sent to EPA officials in June 2002, industry representatives offered to fund a nationwide air emissions monitoring study to collect emissions data from AFOs in exchange for enforcement protection.¹⁸ The industry’s June 2002 safe harbor proposal formed almost verbatim the Air Consent Agreement that EPA published for voluntary enrollment in early 2005.¹⁹

Under the Agreement secretly negotiated with industry representatives, EPA promised not to sue AFOs for violating CAA permitting requirements or CERCLA/EPCRA reporting requirements in exchange for AFOs paying a nominal civil penalty to fund the nationwide air emissions monitoring study.

¹⁷ See, e.g., Press Release, Dep’t of Justice, Ohio’s Largest Egg Producer Agrees to Dramatic Air Pollution Reductions from Three Giant Facilities (Feb. 23, 2004), https://www.justice.gov/archive/opa/pr/2004/February/04_enrd_105.htm; 2017 OIG REPORT at 17 (“[M]onitoring conducted as part of an EPA enforcement case in 2003 demonstrated . . . total PM emissions of 550 and 700 tons per year at two large egg-layer AFOs,” significantly “exceed[ing] the 250-tons-per-year permitting threshold for PM emissions.”); see also Press Release, Dep’t of Justice, Government Reaches Settlements with Seaboard Foods and PIC USA (Sept. 15, 2006), https://www.justice.gov/archive/opa/pr/2006/September/06_crm_625.html; Press Release, Dep’t of Justice, Nation’s Second Largest Hog Producer Reaches Settlement With U.S. & Citizen’s Group (Nov. 1, 2001), https://www.justice.gov/archive/opa/pr/2001/November/01_enrd_604.htm.

¹⁸ 2002 Industry Safe Harbor Proposal.

¹⁹ See *id.*; 2005 Notice at 4958.

B. The Air Consent Agreement Provided a Safe Harbor from Enforcement of Federal Law Pending the Finalization of EEMs.

The Air Consent Agreement outlines two main sections: (1) the Consent Agreement, and (2) the Monitoring Fund. The Consent Agreement includes the main terms of the Agreement between participating AFOs and the government, including a safe harbor under which the government releases and covenants not to sue participating AFOs for civil violations of the CAA; section 103 of CERCLA; and section 304 of EPCRA.²⁰ In exchange for this enforcement forbearance from EPA, participating AFOs agreed to pay a nominal penalty, as well as a payment of \$2,500 per facility, into a fund known as the Monitoring Fund, which was then to be used to finance the two-year National Air Emissions Monitoring Study (NAEMS).²¹

The Agreement's safe harbor provision covers two substantive Clean Air Act permitting programs, the Title V operating permit program, and applicable State Implementation Plan (SIP) requirements for VOC, ammonia, hydrogen sulfide, and particulate matter. First, it includes the requirements applicable to new and expanding major stationary sources under Parts C and D of Title I, Prevention of Significant Deterioration (PSD) and New Source Review (NSR).²² Second, it includes operating permits required under Title V for major stationary sources.²³ Third, it includes any SIP requirements that regulate the rate, quantity, or concentration of the covered air pollutants.²⁴

In all three permitting programs, the severity of the air pollution in a given air basin determines whether a stationary source exceeds a certain tons per year threshold and thus must obtain a permit under PSD, NSR, and Title V as a major stationary source. This threshold ranges from 10 tons per year in an extreme ozone nonattainment area to 250 tons per year in an area that attains the applicable National Ambient Air Quality Standard.

²⁰ 2005 Air Consent Agreement at ¶¶ 7–23.

²¹ *Id.* at ¶ 53.

²² *Id.* at ¶ 26; 42 U.S.C. §§ 7470–7515.

²³ 2005 Air Consent Agreement at ¶ 26; 42 U.S.C. §§ 7661–7661f.

²⁴ 2005 Air Consent Agreement at ¶ 26.

The Agreement's safe harbor provision covers two reporting requirements: section 103 of CERCLA,²⁵ and section 304 of EPCRA. EPCRA contains a general requirement that facilities that "release" more than a threshold quantity of an "extremely hazardous substance" must report that release to local emergency response agencies, and that those reports must be made available to the public.²⁶ Immediate release reporting under EPCRA provides local and state emergency responders with information critical to appropriately assessing and safely responding to citizen complaints of suspicious or noxious odors. EPA lists ammonia and hydrogen sulfide as "extremely hazardous substances" under EPCRA and lists a reportable quantity of 100 pounds per day. The Air Consent Agreement's safe harbor provision continues to exempt participating AFOs from EPA enforcement for failing to report these releases.

According to EPA, its reason for exchanging a safe harbor from enforcement of the CAA, CERCLA, and EPCRA for a two-year monitoring study was to timely "collect data and aggregate it with appropriate existing emissions data; analyze the monitoring results; and create tools (*e.g.*, tables and/or emission models) that AFOs could use to determine whether they emit pollutants at levels that require them to apply for permits under the CAA or submit notifications under CERCLA or EPCRA."²⁷ And further, because the monitoring study would be "designed to generate scientifically credible data to provide for the characterization of emissions from all major types of AFOs in all geographic areas where they are located," it would ultimately be used "to produce a scientifically sound basis for measuring and estimating air emissions from AFOs" through EEMs.²⁸ Thus, EPA provided that the reason for the Agreement was to ensure "the achievement of real environmental benefits to protect public health and the environment while supporting a sustainable agricultural sector."²⁹

To that end, once the final EEMs are published the participating AFOs would have a defined amount of time to apply the EEMs to their operations and determine whether any CAA, CERCLA, or EPCRA statutory obligations apply, and, if so, bring their operations into

²⁵ Subsequently, the Fair Agricultural Reporting Method (FARM) Act expressly exempted reporting of air emissions from animal waste at a farm from CERCLA section 103. *See* Pub. L. 115-141 § 1101-03 (codified at 42 U.S.C. § 9603(e) (2018)).

²⁶ 42 U.S.C. § 11004(a).

²⁷ 2005 Notice at 4960.

²⁸ *Id.*

²⁹ *Id.* at 4961.

compliance with those requirements.³⁰ Once a participating AFO complies with each of those requirements, “the statute of limitations for all claims covered by the release and covenant not to sue . . . will be tolled from the date this Agreement is approved by the [Environmental Appeals Board] until . . . 120 days after Respondent files the required certification . . . or December 31, 2011,” whichever is earlier.³¹ In the alternative, if EPA determines that it cannot develop EEMs, then it should notify participants that the Air Consent Agreement, including its enforcement amnesty, will come to a close.³² As the amnesty tolling provision suggests, EPA anticipated that the terms of the Air Consent Agreement would be met and the Agreement fulfilled before 2012 at the latest.³³

The Air Consent Agreement embodies a highly unusual enforcement philosophy inconsistent with the Clean Air Act’s enforcement scheme. EPA alleged violations prior to any investigation, assessed civil penalties without considering civil penalty factors, and invited participants to enter into the Agreement after it had already been negotiated for years with the industry. By its own terms, the Agreement deferred enforcement until the Agency developed EEMs, which EPA expected to complete within 18 months of completing NAEMS.

C. The Environmental Appeals Board and the D.C. Circuit Court of Appeals Allowed EPA to Implement the Air Consent Agreement.

To enter the Air Consent Agreement, an AFO owner or operator needed only to inform EPA of its election to participate and provide EPA with certain information regarding the size and number of AFOs that they designated for inclusion. In total, nearly 2,600 participants, representing 13,900 AFO facilities in 42 states, entered into the Air Consent Agreement.³⁴ “According to the EPA, these 13,900 AFOs comprise more than 90 percent of the largest AFOs in the United States,” and included participants from across the broiler chicken, egg layer, hog, and dairy industries.³⁵

³⁰ 2005 Air Consent Agreement at ¶ 28.

³¹ *Id.* ¶ 31.

³² *Id.* ¶ 38.

³³ *Id.*; see also 2017 OIG REPORT at 5 (providing that “[b]ased on . . . original expectations, . . . AFOs would have obtained any necessary permits and installed emission controls by 2010”).

³⁴ 2017 OIG REPORT at 6.

³⁵ *Id.*

In 2006, EPA’s Environmental Appeals Board (EAB) approved individual Consent Agreements in batches. In addition to ratifying the Agreements, EAB affirmed EPA’s authority to enter into the Agreement as an administrative enforcement action.³⁶ The relevant penalties and monitoring funds were collected from individual participants as well as from the National Pork Board, which provided at least \$6,000,000 towards payment of these fees on behalf of hog producers rather than the producers paying those fees themselves.³⁷ The NAEMS process then began in earnest in 2007—the year NAEMS monitoring should have been completed according to the original timeline. It continued for three years, rather than two, and “completed in early 2010, about 2 years later than originally expected.”³⁸

Several environmental and community groups challenged the Air Consent Agreement as a rulemaking that violated the CAA, CERCLA, EPCRA, and public notice and comment requirements. The D.C. Circuit Court of Appeals denied the groups’ consolidated petitions for review, holding that the Agreement is an enforcement action not subject to judicial review.³⁹

In its briefing before the D.C. Circuit, EPA took the legal position that the safe harbor was a “limited covenant not to sue” that would last approximately three and a half years until 2010.⁴⁰ The court took EPA at its word, concluding that the Agreement “merely defers enforcement” and a “limited deferral subject to enforcement conditions works no change in the agency’s substantive interpretation or implementation of the Acts.”⁴¹ The court also rejected the

³⁶ See, e.g., *In re Consent Agreements & Proposed Final Orders for AFOs*, 2006 WL 478143 (EAB Jan. 27, 2006) (finding that first twenty Agreements were administrative penalty orders subject to Board review).

³⁷ Initially, the National Pork Board was enjoined from contributing \$6,000,000 on behalf of producers because the contribution was found to violate the Pork Act and contravene public policy, but this decision was reversed by a second administrative law judge allowing the National Pork Board to pay farmer’s fees associated with EPA’s Air Emission Study. See *In re: McDowell*, 65 Agric. Dec. 795 (U.S.D.A. 2006) *rev’d*, *In re: McDowell*, 67 Agric. Dec. 1230, 1232 (U.S.D.A. 2008) (“revers[ing] the ALJ’s Initial Decision [and granting Administrator’s motion to dismiss] [because] Petitioners lack standing, the Second Amended Petition fails to state a legally cognizable claim, and the National Pork Board’s payment of the per-farm-fee associated with EPA’s Air Emissions Study is in accordance with the Pork Act and the Pork Order”).

³⁸ 2017 OIG REPORT at 11; 10 (“Based on the original expectations for completion of the tasks in the Notice, the NAEMS monitoring would have been completed in 2007, and the EPA would have begun publishing EEMs in 2009.”); 12 (Figure 4) (comparing expected and actual NAEMS development timeline).

³⁹ *Ass’n of Irrigated Residents v. EPA*, 494 F.3d 1027, 1031 (D.C. Cir. 2007).

⁴⁰ See EPA’s Brief at 11-12, 23, 28, (D.C. Cir. Feb. 2, 2007).

⁴¹ *Ass’n of Irrigated Residents*, 494 F.3d. at 1033.

groups' contention that EPA had abdicated its enforcement duty because the court believed the limited deferral "is part of the agency's attempt to ensure that AFOs comply with the Acts."⁴²

Had the court understood that EPA would extend its "limited" deferral for over ten years to 2021 and beyond—straight through the Obama and Trump Administrations—then that unbound deferral would undoubtedly have affected the court's analysis.

D. EPA Has Relied On The Air Consent Agreement To Deny Petitions To Regulate Air Emissions from AFOs.

To make matters worse, in addition to using the Air Consent Agreement and EEM process as a shield against adequately enforcing the CAA or EPCRA against AFO polluters, EPA is using the Agreement as an excuse to deny or ignore every administrative petition related to AFO air pollution that has been filed with the Agency since 2005. EPA is also allowing AFOs to use the Agreement to keep citizens from enforcing EPCRA.

Since 2005, EPA has received several administrative rulemaking petitions to address AFO emissions, including a 2009 petition to list and regulate AFOs as a source category under CAA Section 111 (2009 CAFO Source Petition),⁴³ and a 2011 petition to regulate ammonia as a criteria pollutant under CAA Sections 108 and 109 (2011 Ammonia Petition).⁴⁴ According to a report by EPA's Office of the Inspector General (OIG), discussed further below, "EPA staff told [OIG] they did not plan to evaluate the need for additional regulations as laid out in these petitions until the EEMs are finalized."⁴⁵

For the 2009 CAFO Source Petition, EPA's refusal to engage with the subject matter of the petition came in the form of a denial of the petition in 2017.⁴⁶ As noted in the denial signed by former EPA Administrator Scott Pruitt, EPA explicitly denied the petition not on the

⁴² *Id.* at 1035.

⁴³ The Humane Soc'y of the U.S., Petition to the U.S. EPA to List Concentrated Animal Feeding Operations Under CAA Section 111 (B)(1)(A) (Sep. 21, 2009).

⁴⁴ Environmental Integrity Project, Petition to the U.S. EPA for the Regulation of Ammonia as a Criteria Pollutant Under Clean Air Act Sections 108 and 109 (Apr. 6, 2011).

⁴⁵ 2017 OIG REPORT at 18.

⁴⁶ Denial of Petition to List Concentrated Animal Feeding Operations Under Clean Air Act, 82 Fed. Reg. 60,940 (Dec. 26, 2017).

substance of the request,⁴⁷ but rather due to the “ongoing budgetary uncertainties” and EEM process.⁴⁸ Acknowledging the findings of the 2017 OIG Report, the denial letter then goes on to say that EPA will conduct a systematic planning process as identified in that report by April 2018 and establish milestones for issuing updated draft EEMs by July 2018.⁴⁹ A comprehensive set of draft or final EEMs still has yet to be issued, but EPA continues to use the EEM process as a convenient excuse not to take further action to *actually address* and limit air pollution from concentrated animal feeding operations (CAFOs), as this petition would have enabled.

With respect to the 2011 Ammonia Petition, EPA has failed to respond—even as the evidence of harm continues to mount.⁵⁰ As mentioned above, public health scientists have drawn clear connections between ammonia from animal production and thousands of annual PM-related deaths, and have also shown that living in close proximity to AFOs is associated with pneumonia.⁵¹ Another study found significant associations between Pennsylvania CAFOs and asthma.⁵² The authors of the ammonia study noted that industrial food animal production facilities “are a source of odors and several air pollutants, including particulate matter, hydrogen sulfide, and ammonia,” and “these air pollutants and odors have been associated with asthma exacerbations.”⁵³ The role of ammonia in exacerbating water quality impairments has also become more clear over time. It now appears that AFOs emit more ammonia—and more ammonia deposits closer to the source of emissions than previously thought.⁵⁴ This means that

⁴⁷ Letter from E. Scott Pruitt, Administrator, EPA, to Tom Frantz, President, Ass’n of Irrigated Residents, at 2 (Dec. 15, 2017) (“This denial is not based on a determination as to whether CAFOs meet the requirements for listing under CAA section 111(b)(1)(A).”).

⁴⁸ *Id.* at 1–2.

⁴⁹ *Id.* at 8–9.

⁵⁰ Although the petitioners challenged EPA’s failure to respond in 2015 (re-filed in 2016), petitioners voluntarily dismissed the complaint in 2017. See Notice of Voluntary Dismissal, *Environmental Integrity Project et al. v. EPA*, Case No. 16-cv-02203-ABJ (D.D.C. Jan. 17, 2017).

⁵¹ See *supra* Part II.

⁵² S. Rasmussen et al., *Proximity to Industrial Food Animal Production & Asthma Exacerbations in Pennsylvania, 2005-2012*, 14 INT’L J. ENV’T. RESH. PUB. HEALTH 362 (2017).

⁵³ *Id.*

⁵⁴ See, e.g., ENV’T INTEGRITY PROJECT, AMMONIA EMISSIONS FROM POULTRY INDUSTRY MORE HARMFUL TO CHESAPEAKE BAY THAN PREVIOUSLY THOUGHT (2018), <https://environmentalintegrity.org/wp-content/uploads/2017/02/Ammonia-Report.pdf>; see also ENV’T INTEGRITY PROJECT, POULTRY INDUSTRY POLLUTION IN THE CHESAPEAKE REGION (2020), <https://environmentalintegrity.org/wp-content/uploads/2020/04/EIP-Poultry-Report.pdf>; J. Baker et al., *Modeling & Measurements of Ammonia from Poultry Operations: Their Emissions, Transport, & Deposition in the Chesapeake Bay*, 706 SCI. TOTAL ENVIRONMENT 135290 (Mar. 2020), <https://www.sciencedirect.com/science/article/pii/S0048969719352829>.

ammonia is a central contributor to algae blooms, dead zones, and other impairments in large estuaries like the Chesapeake Bay.

In addition, EPA continues to allow AFOs to use the Air Consent Agreement and EEM development process to keep citizens from enforcing statutes such as EPCRA⁵⁵ against AFOs.⁵⁶ Although EPA can prevent the Agreement from being used as an affirmative defense in EPCRA citizen enforcement suits, the agency has opted not to do so. As a result, EPA is allowing this Agreement to stand in the way of effective enforcement of this statute against AFO polluters, regardless of the amount or persistence of that pollution.

IV. EPA’S MONITORING STUDY WAS FLAWED, UNDERMINING EPA’S ABILITY TO DEVELOP VALID EEMs.

A. EPA Limited the Size and Geographic Scope of its Study, Despite the Entry of Nearly 14,000 AFOs into the Agreement.

In announcing the Air Consent Agreement and NAEMS Protocol, EPA claimed that “[m]onitoring will occur at facilities across the country to get a representative sample of the facility types,” and the NAEMS “protocol will provide sufficient data to get a valid sample that is representative of the vast majority of the participating AFOs.”⁵⁷ EPA intended to use the results of this monitoring study “to generate scientifically credible data to provide for the characterization of emissions from all major types of AFOs in all geographic areas where they are located.”⁵⁸ However, the study fell far short of achieving this goal for a variety of reasons,

⁵⁵ In 2019, EPA finalized a rule exempting AFOs from their reporting obligations under EPCRA section 304. *See* Amendment to Emergency Release Notification Regulations on Reporting Exemption for Air Emissions From Animal Waste at Farms; Emergency Planning and Community Right-to-Know Act, 84 Fed. Reg. 27,533 (June 13, 2019). That rulemaking has been challenged in federal court by a coalition of environmental and environmental justice groups, including many of the signatories here. *Rural Empowerment Association for Community Help, v. EPA*, Case No. 18-02260-TJK (D.D.C. 2019). Following the D.C. Circuit’s decision in *Waterkeeper Alliance v. EPA*, 853 F.3d 527, 537–38 (D.C. Cir. 2017), we expect the court to overturn EPA’s 2019 rule, and therefore believe that AFOs may use the Air Consent Agreement to hamper citizen suit enforcement of EPCRA.

⁵⁶ *See, e.g., Humane Soc’y of the United States v. Hanor Company of Wisconsin, LLC*, 289 F. Supp. 3d 692 (E.D. N.C. 2018).

⁵⁷ 2005 Notice at 4960; *see also id.* at 4968 (Attach. B to App. 1: NAEMS Protocol).

⁵⁸ *Id.* at 4960.

including the industry's role in selecting sites, the small number of selected sites, and EPA's flawed site selection methodology.⁵⁹

From the onset, the design and implementation of the study was limited because industry exerted significant control on the pool of potential study sites. Although "EPA acknowledged that emissions data should be collected for every type of animal feeding operation and practice," EPA officials concluded that the industry should be responsible for site selection,⁶⁰ deferring to industry yet again.

Records obtained by the Environmental Integrity Project under the Freedom of Information Act confirm that AFO owners and operators played a major role in selecting the sites in NAEMS.⁶¹ For example, Perdue broiler facilities did not participate in the Air Consent Agreement. Perhaps as a direct consequence, NAEMS did not include a single broiler site in the Mid-Atlantic, despite incredible industry concentration in the region.⁶² Further, Tyson Foods, one of the largest meat producers in the United States, directly sponsored the data collection at its broiler sites in Kentucky.⁶³

Moreover, despite almost 14,000 AFOs receiving enforcement protection under the Agreement, the NAEMS study itself only included 27 sites at 20 AFOs in 10 states.⁶⁴ The small

⁵⁹ See GAO, CONCENTRATED ANIMAL FEEDING OPERATIONS: EPA NEEDS MORE INFORMATION & A CLEARLY DEFINED STRATEGY TO PROTECT AIR & WATER QUALITY FROM POLLUTANTS OF CONCERN 37–39 (2008) <https://www.gao.gov/assets/gao-08-944.pdf> ("[T]he National Air Emissions Monitoring Study may not provide the data that EPA needs to develop comprehensive protocols for quantifying air emissions from [AFOs] for a variety of reasons.") [hereinafter 2008 GAO Report]; see also *id.* at 7 ("[A]s currently structured, the study may not provide the scientific and statistically valid data it was intended to provide and that EPA needs to develop air emissions protocols.").

⁶⁰ *Id.* at 38–39 ("According to EPA officials, the industry identified those monitoring sites that they believed best represented the type of operations and manure management practices that are in their various animal sectors.").

⁶¹ Letter from Tarah Heinzen, Env't Integrity Project, to EPA Docket Center, (June 11, 2012) (citing email from Heber to Nizich (Aug. 9, 2006) (stating that "the National Milk Producers Federation approved these site selections for the NAEMS")).

⁶² See PEW, *Big Chicken: Pollution & Industrial Poultry Production in America* (July 26, 2011), <https://www.pewtrusts.org/en/research-and-analysis/reports/2011/07/26/big-chicken-pollution-and-industrial-poultry-production-in-america>; see also EPA, *2012 Monitored AFOs*, <https://archive.epa.gov/airquality/afo2012/web/html/index.html>.

⁶³ IOWA STATE UNIV. & UNIV. OF KENTUCKY, FINAL PROJECT REPORT ON SOUTHEASTERN BROILER GASEOUS & PARTICULATE MATTER EMISSIONS MONITORING (Dec. 2009) (describing emissions monitoring results of two Tyson broiler production houses located on two separate farm sites in western Kentucky), <https://archive.epa.gov/airquality/afo2012/web/pdf/ky1bsummaryreport.pdf>.

⁶⁴ See 2017 OIG REPORT at 7; see also *2012 Monitored AFOs*, <https://archive.epa.gov/airquality/afo2012/web/html/index.html>.

number of sites selected led the Government Accountability Office (GAO) to raise concerns in 2008, before the completion of NAEMS, that “the study did not include a sufficient number of monitoring sites to establish a statistically valid sample.”⁶⁵ As explained in GAO’s report, “[w]ithout such a sample . . . EPA will not be able to accurately estimate emissions for all types of operations.”⁶⁶

EPA also failed to select geographically representative sites. When designing NAEMS, EPA purportedly intended to study a statistically significant number of representative sites and generate “scientifically credible data to provide for the characterization of emissions from all major types of AFOs in all geographic areas where they are located.”⁶⁷ Yet the study design fell far short of anything capable of achieving this. Primary Investigators for the sites were selected before the NAEMS sites themselves, limiting the role of representativeness in the site selection process since investigators needed to be proximately located to NAEMS sites.⁶⁸ As GAO observed:

[T]he monitoring study does not include the 16 combinations of animal types and geographic regional pairings recommended by EPA’s expert panel. The panel recommended this approach so that the study sample would be representative of the vast majority of participating animal feeding operations, accounting for differences in climatic conditions, manure-handling methods, and density of operations. However, EPA approved only 12 of the 16 combinations recommended by the expert panel, excluding southeastern broiler, eastern layer, midwestern turkey, and southern dairy operations.⁶⁹

Atmospheric conditions, facility age and design, feed, and other variables may significantly impact air emissions.⁷⁰ Therefore, a statistically significant study should include multiple sites representing as many different sets of climate and geographic conditions as possible. This was simply not possible with such a small number of sites.

⁶⁵ 2008 GAO Report at 7, 38–39.

⁶⁶ *Id.*

⁶⁷ 2005 Notice at 4960; *see also* 2008 GAO Report at 36.

⁶⁸ Letter from Tarah Heinzen, Env’t Integrity Project, to EPA Docket Center, (June 11, 2012) (citing Heber, “Site Selection Procedure” (Jun. 10, 2005)).

⁶⁹ 2008 GAO Report at 37–38.

⁷⁰ *See* 2005 Notice at 4977 (listing several “influences on emissions” provided by producer, rather than collected by study).

B. EPA Failed to Generate Adequate Data to Develop EEMs.

In response to the initial announcement of the Agreement and NAEMS, experts and community groups raised concerns about the protocol, even before EPA had selected sites or initiated monitoring.⁷¹ While the study was ongoing, GAO again warned EPA that NAEMS may not “provide data of sufficient quantity and quality” to establish the planned EEMs.⁷² But EPA ignored those concerns. Consequently, EPA’s NAEMS study did not generate the data needed to develop comprehensive protocols for quantifying air emissions from AFOs. In 2013, years after EPA concluded the monitoring study, EPA’s Scientific Advisory Board (SAB) confirmed the concerns raised by GAO in 2008 regarding the small number of sites in the study and the quality of the data.⁷³

In reviewing EPA’s draft EEMs, which the SAB ultimately found unsuitable for national use, SAB panel members noted that the California broiler data sets for Total Suspended Particles and PM_{2.5} had less than 10 percent completeness, while that entire site had only 20 percent completeness during the fall.⁷⁴ EPA also had problems receiving data from contractors and excluded data due to changes in monitoring method. Short monitoring periods at certain sites in combination with missing or invalidated data has resulted in a much smaller than anticipated dataset from which to develop EEMs.

Moreover, EPA’s unnecessarily restrictive data completeness requirements further limited the availability of usable data. The NAEMS protocol required 75 percent of any hour’s data to be valid to accept the hour’s data, and 75 percent of any day’s hours to accept the day’s data.⁷⁵ The 2013 SAB Report noted the study’s low data completeness rates, questioning EPA’s

⁷¹ Many of the signatories submitted comments regarding EPA’s flawed 2005 Air Consent Agreement and NAEMS Protocol. *See, e.g.*, Comments by B. Newell et al., Center on Race, Poverty & the Environment et al., EPA-HQ-OAR-2004-0237-0476 (Mar. 1, 2005).

⁷² 2008 GAO Report at 7.

⁷³ EPA SCI. ADVISORY BD., REVIEW OF EEMs FOR BROILER AFOs AND FOR LAGOONS & BASINS AT SWINE & DAIRY AFOs 2 (Apr. 19, 2013), available at [https://yosemite.epa.gov/sab/5CSABPRODUCT.NSF/08A7FD5F8BD5D2FE85257B52004234FE/\\$File/EPA-SAB-13-003-unsigned%20.pdf](https://yosemite.epa.gov/sab/5CSABPRODUCT.NSF/08A7FD5F8BD5D2FE85257B52004234FE/$File/EPA-SAB-13-003-unsigned%20.pdf), [hereinafter 2013 SAB REPORT] (“In summary, the SAB concludes that the EPA has developed statistical models based on combined data sets and predictor variables which have limited the ability of the models to predict emissions beyond the small number of farms in the dataset.”).

⁷⁴ *Id.*

⁷⁵ *Id.*

decision to require a “too stringent and unnecessary” 75 percent completeness despite the study’s frequent failure to meet that goal.⁷⁶

Though EPA has acknowledged the problems with its completeness criteria,⁷⁷ it has failed to rectify the issue. When issuing the August 2020 draft swine EEMs, EPA conceded that completeness requirements for its open area/source data should be lowered, but only to 52 percent.⁷⁸ However, EPA then released draft poultry EEMs in August 2021 that retained the 75 percent completeness requirement for all data sources.⁷⁹ The completeness criteria for swine barn emission data have also remained unchanged, and EPA maintains that “the potential need to revise this value for barn source emissions will be assessed at a later date, if appropriate.”⁸⁰ Yet no such assessment has taken place.

The more EPA evaluates the data, the more problems it uncovers. For instance, in the draft swine EEMs released in August 2020, EPA discovered new issues with ventilation and moisture interference, resulting in the invalidation and removal of numerous ammonia, hydrogen sulfide, and particulate matter measurements from the dataset.⁸¹ The revision included the removal of all open source ammonia emissions data from one of only four monitoring sites.⁸² This continued reduction of the dataset, which is already too small to provide a complete representative sample, only further compromises EPA’s ability to establish accurate EEMs.

⁷⁶ *Id.* at 26.

⁷⁷ See EPA, QUALITY ASSURANCE PROJECT PLAN: DEVELOPMENT OF EEMs FOR AIR EMISSIONS FROM AFOs 15 (Mar. 13, 2018) [hereinafter 2018 QAPP], available at https://www.epa.gov/sites/default/files/2018-03/documents/final_eem_qapp_v0.0_for_web_0.pdf.

⁷⁸ *Id.* EPA, DEVELOPMENT OF EEMs FOR SWINE BARNS & LAGOONS, DRAFT 3-1 to 3-4. (Aug. 2020), [hereinafter 2020 Draft EEMs for Swine Barns & Lagoons] available at https://www.epa.gov/sites/default/files/2020-08/documents/development_of_emissions_estimating_methodologies_for_swine_barns_and_lagoons.pdf.

⁷⁹ EPA, DEVELOPMENT OF EEMs FOR BROILER OPERATIONS, DRAFT 5-3 to 5-4 (Aug. 2021) [hereinafter 2021 Draft EEMs for Broilers], available at <https://www.epa.gov/sites/default/files/2016-06/documents/afobroilereemreport2012draft.pdf>; DEVELOPMENT OF EEMs FOR EGG-LAYING HOUSES & MANURE SHEDS, DRAFT 2-2 (Aug. 2021) [hereinafter 2021 Draft EEMs for Poultry Houses & Manure Sheds], https://www.epa.gov/system/files/documents/2021-08/development_of_emissions_estimating_methodologies_for_egg_layer_houses_and_manure_sheds.pdf.

⁸⁰ 2018 QAPP at 15.

⁸¹ 2020 Draft EEMs for Swine Barns & Lagoons at 3-2 and 4-2.

⁸² *Id.* at 3-16 and 3-17.

C. EPA Failed to Finalize EEMs Following the Completion of NAEMS.

Following the completion of NAEMS in 2010, three years later than expected, the initial terms of the Air Consent Agreement provided that EPA had 18 months to evaluate the data collected through the study and publish emission unit-specific estimating methodologies.⁸³ In 2012, EPA published draft EEMs for 8 of the 36 emission sources and pollutants described in the Agreement.⁸⁴ Those draft EEMs, which covered broiler AFOs and lagoons and basins at swine and dairy AFOs, were noticed for public comment and submitted to the agency's Scientific Advisory Board (SAB) for review and feedback.⁸⁵

The response to the draft EEMs from both the public and EPA's own SAB was highly critical and called into question NAEMS design and methodology, the data generated, EPA's statistical approach, its treatment of the available data, and the agency's ability to use the draft to accurately estimate air pollution from facilities not otherwise included in the study itself.⁸⁶ The SAB lambasted EPA for its approach to the NAEMS process and the data collected, concluding—among other things—that the draft EEMs developed by EPA should not be applied on a national scale because “EPA has developed statistical models based on combined data sets and predictor variables which have limited the ability of the models to predict emissions beyond the small number of farms in the dataset.”⁸⁷

The SAB recommended that “EPA not apply the current versions of the statistical and modeling tools for estimating emissions beyond the farms in EPA's data set,” and provided “recommendations for how the agency may expand the data set and the applicability of the

⁸³ 2005 Air Consent Agreement at ¶ 32 (“EPA will publish [EEMs] within 18 months of the conclusion of the monitoring period . . .”).

⁸⁴ See 2017 OIG REPORT at 11; EPA, DEVELOPMENT OF EEMs FOR LAGOONS & BASINS AT SWINE & DAIRY AFOs, DRAFT (Feb. 2012) [hereinafter 2012 Draft EEMs for Swine & Dairy AFOs], available at [https://yosemite.epa.gov/sab/SABPRODUCT.NSF/81e39f4c09954fcb85256ead006bc86e/AE6639DD6B79360E852579A4004E5529/\\$File/PDF+for+Development+of+Emissions+Estimating+Methodologies+for+Lagoons+and+Basins+at+Swine+and+Dairy+Animal+Feeding+Operation.pdf](https://yosemite.epa.gov/sab/SABPRODUCT.NSF/81e39f4c09954fcb85256ead006bc86e/AE6639DD6B79360E852579A4004E5529/$File/PDF+for+Development+of+Emissions+Estimating+Methodologies+for+Lagoons+and+Basins+at+Swine+and+Dairy+Animal+Feeding+Operation.pdf); EPA, DEVELOPMENT OF EEMs FOR BROILER OPERATIONS, DRAFT (Feb. 2012) [hereinafter 2012 Draft EEMs for Broilers], available at <https://www.epa.gov/sites/default/files/2016-06/documents/afobroilereemreport2012draft.pdf>.

⁸⁵ Notice of Availability: Draft Documents Related to the Development of EEMs for Broiler AFOs and Lagoons & Basins for Swine & Dairy AFOs, 77 Fed. Reg. 14716 (Mar. 13, 2012); see also Comments Submitted in Response to Notice of Availability, <https://www.regulations.gov/document/EPA-HQ-OAR-2010-0960-0015/comment>.

⁸⁶ Many of the signatories submitted comments regarding EPA's flawed 2012 Draft EEMs. See, e.g., Comments Submitted by R. Lawrence, Center for a Livable Future, EPA-HQ-OAR-2010-0960-0037 (Jun. 11, 2012); T. Heinzen, Environmental Integrity Project et al., EPA-HQ-OAR-2010-0960-0026 (Jun. 11, 2012).

⁸⁷ 2013 SAB REPORT at 2.

models.”⁸⁸ For example, SAB recommended that EPA expand its dataset by collecting data from monitoring efforts outside of the NAEMS, and using NAEMS data that were initially excluded due to EPA’s data completeness criteria.⁸⁹

The SAB also advocated for a process-based modeling approach to EEM development, noting that “[p]rocess-based models would be more likely to be successful in representing a broad range of conditions than the current models because [they] represent the chemical, biological and physical processes and constraints associated with emissions.”⁹⁰

In short, the SAB told EPA to go back to the drawing board and revise its process for developing EEMs based on the data gathered through NAEMS. EPA has responded to some of SAB’s concerns, but not all. As a result, EPA has yet to finalize any EEMs or bring any participating parties into compliance with the CAA, CERCLA, and EPCRA. Nor has EPA revoked the safe harbor provision established in the Air Consent Agreement.

D. EPA Has Failed to Consider Available Information from Peer-Reviewed Studies.

Given the clear flaws in NAEMS design and implementation, which yielded non-representative and incomplete data, it was incumbent upon EPA to expand the scope of AFO emission data it relied on to ensure accurate EEMs. However, the draft EEMs continue to rely exclusively on the limited NAEMS data, rather than incorporating findings from numerous peer-reviewed AFO emissions studies. The small number of sites in each livestock sector and the data gaps and technical problems experienced during NAEMS heighten the importance of outside research. EPA’s decision to limit available information will result in inadequate EEMs.

From 2007 to 2010, EPA collected emissions data at 27 sites across 20 AFOs. The data were originally published in 2011 and finalized in 2012. EPA relied exclusively on these data to develop the 2012 draft EEMs for broilers and lagoons/basins at swine and dairy AFOs, as well as the 2020 and 2021 draft EEMs for swine and poultry AFOs. However, the Air Consent

⁸⁸ *Id.*

⁸⁹ *Id.* at 1.

⁹⁰ *Id.* at 2.

Agreement requires that EPA consider *all* relevant information when developing EEMs, not just the data collected at a small sample of AFOs during the monitoring study:

The term “Emissions-Estimating Methodologies” means those procedures that will be developed by EPA, based on data from the national air emissions monitoring study *and any other relevant data and information*, to estimate daily and total annual emissions from individual Emission Units and/or Sources.⁹¹

Although the Agreement clearly provides that EPA must consider “relevant data and information” *other* than the monitoring data, EPA has elected to interpret this term so narrowly as to exclude all information not derived from NAEMS. In 2011, EPA asked the public to submit information relating to the agency’s development of draft EEMs for broiler confinement facilities and lagoons/basins at swine and dairy AFOs.⁹² Despite receiving several relevant, peer-reviewed emissions studies in response to the call for information, EPA ultimately concluded that none of the studies were relevant to the EPA’s draft EEMs.⁹³

In an attempt to justify EPA’s narrow reading of the Air Consent Agreement and exclusion of outside data, the 2012 draft EEMs for Swine and Dairy AFOs state that “none of the articles previously obtained by the EPA to support emissions factor development used remote sensing techniques to measure lagoon emissions.”⁹⁴ This explanation is inadequate. EPA did not explain why it preferred remote sensing techniques over other techniques. Nor did it explain why the techniques used in the outside studies were incompatible with the remote sensing data. Similarly, in the 2012 draft EEMs for Broilers, EPA disregarded peer-reviewed poultry emissions studies solely because the researchers used different methods.⁹⁵

Since the publication of the 2012 draft EEMs, EPA has reaffirmed its commitment to relying exclusively on NAEMS data. In 2018, after nearly a decade of delay and inaction, EPA decided to put off any investigation into the “potential need for additional non-NAEMS data”

⁹¹ 2005 Air Consent Agreement at ¶10 (emphasis added); *see also* 2005 Notice at 4960 (“EPA will use the data generated from the monitoring *and all other available, relevant data* to develop [EEMs]”) (emphasis added).

⁹² *See* Call for Information Related to the Development of EEMs for AFOs, 76 Fed. Reg. 3060 (Jan. 19, 2011); *see also* Comments Submitted in Response to Call for Information, <https://www.regulations.gov/document/EPA-HQ-OAR-2010-0960-0001/comment>.

⁹³ 2012 Draft EEMs for Swine & Dairy AFOs Table 3-3, 2012 Draft EEMs for Broilers Table 3-14 (Feb. 2012).

⁹⁴ 2012 Draft EEMs for Swine & Dairy AFOs at 3-14.

⁹⁵ 2012 Draft EEMs for Broilers at 4-13 to 4-23.

until a “later stage” in the project “if appropriate.”⁹⁶ The 2020 draft EEMs for Swine AFOs used peer-reviewed studies only to inform the selection of possible model parameters.⁹⁷ But the Air Consent Agreement requires EPA to use available data to *develop* the EEMs.⁹⁸

EPA’s continued exclusion of clearly relevant data from the EEM development process violates the Air Consent Agreement and confirms that continuing the already protracted EEM development process would be futile. Moreover, EPA cannot develop adequate EEMs based exclusively on the outdated and incomplete NAEMS monitoring data collected from 2007 to 2010 because the industry has changed considerably since the monitoring study concluded over a decade ago.⁹⁹ Furthermore, new studies regarding air emissions from AFOs have been published in recent years, revealing important insights about the emissions generated from various AFO sources and their impacts on local communities.¹⁰⁰ Without the addition of recent outside studies, any EEMs developed by EPA will fail to accurately estimate emissions from AFOs.

E. The 2017 OIG Report Urged EPA to Either Finalize the EEMs or End the Agreement.

In 2017, six years after all EEMs were supposed to be finalized, OIG released a report on EPA’s actions to evaluate air emissions from AFOs, focusing on the Air Consent Agreement and NAEMS.¹⁰¹ As with the SAB, OIG was highly critical of EPA’s extreme delay in developing EEMs following the completion of NAEMS, noting that “competing priorities [have] resulted in the EPA’s Office of Air and Radiation putting the EEM effort largely on hold” to the extent that “the EPA stopped funding the contract for NAEMS analysis.”¹⁰² OIG also expressed concern

⁹⁶ 2018 QAPP at 14.

⁹⁷ 2020 Draft EEMs for Swine Barns & Lagoons at 13-1 to 13-2.

⁹⁸ 2005 Notice at 4960.

⁹⁹ Over the past nine years alone, significant changes to the hog, dairy, broiler, and egg-laying industries can be observed in particular state CAFO expansion trends. For instance, the number of CAFOs operating in Iowa, a state dominated by the hog industry, has increased by 136 percent since 2011. There are 43 percent more CAFOs operating in Wisconsin, where the dairy industry is most prevalent, than what existed in 2011. In Delaware, a broiler-focused state, the CAFO industry has grown by 838 percent. And Ohio, a state dominated by egg-laying operations, has seen a 33 percent increase. *See* EPA, NPDES CAFO Rule Implementation Status – National Summary, Endyear 2011 (Dec. 31, 2011), <https://www.epa.gov/sites/default/files/2015-08/documents/npdes-cafo-rule-implementation-status-national-summary-endyear-2011-0.pdf>; EPA, NPDES CAFO Rule Implementation Status – National Summary, Endyear 2020 (May 11, 2021), <https://www.epa.gov/sites/default/files/2021-05/documents/cafo-status-report-2020.pdf>.

¹⁰⁰ *See* discussion, *supra* Part I.

¹⁰¹ 2017 OIG REPORT at 1.

¹⁰² *Id.* at 10.

about the lack of EPA agricultural air expertise and committed resources, noting that the agency “did not have staff with combined expertise in agricultural emissions, air quality[,] and statistical analysis.”¹⁰³

Although EPA completed NAEMS in early 2010, EPA has yet to finalize the EEMs to make CAA and CERCLA/EPCRA compliance determinations under the terms of the Air Consent Agreement. OIG expressed concern that although the civil enforcement protections were initially planned to expire in 2012, all 14,000 AFOs that participated in the Agreement continue to enjoy civil enforcement protections, and EPA has put several important actions on hold pending development of the EEMs.¹⁰⁴ In short, as OIG concluded, “EPA’s ability to characterize and address AFO air emissions is unchanged since its 2005 Agreement with the AFO industry intended to produce reliable emissions estimation methods.”¹⁰⁵

To continue moving the EEM process forward, OIG recommended that EPA conduct adequate systematic planning—something that the agency should have done *before* conducting NAEMS or preparing the draft EEMs.¹⁰⁶ “Based on the results of systematic planning,” EPA should “determine and document the decision as to whether the EPA is able to develop scientifically and statistically sound emission estimating methodologies for each originally planned emission source and pollutant combination.”¹⁰⁷ After conducting those reviews, OIG recommended that EPA should “[f]or the emission source and pollutant combinations for which the Office of Air and Radiation determines it can develop scientifically and statistically sound emission estimating methodologies, establish public milestone dates for issuing each draft emission estimating methodology” and “[f]or any emission source and pollutant combinations for which the Office of Air and Radiation determines it cannot develop emission estimating methodologies, notify Air Consent Agreement participants of this determination, and that the release and covenant not to sue for those emission sources and pollutant types will expire in accordance with paragraph 38 of the 2005 Air [Consent] Agreement.”¹⁰⁸

¹⁰³ *Id.* at 16.

¹⁰⁴ *Id.*

¹⁰⁵ *Id.* at 18.

¹⁰⁶ *Id.* at 22.

¹⁰⁷ *Id.* at 23.

¹⁰⁸ *Id.*

Since the OIG report was published in 2017, EPA has continued to drag its feet regarding EEM development, despite the clear course correcting path that OIG laid out for the Agency. While EPA maintains that it has timely implemented all OIG recommended actions,¹⁰⁹ in reality, the only action that EPA has completed in good faith is the very first on the list—publishing a planning document to guide future EEMs development.¹¹⁰ As for the remaining four OIG recommendations, EPA has either failed to comply altogether or implemented them in such a half-hearted way so as to undermine their whole purpose, namely, to prevent any further delay.

According to OIG’s corrective action timeline, based on the results of EPA’s systematic planning, EPA was to “document the decision” as to which EEMs could be developed and which could not no later than June 30, 2018.¹¹¹ Yet when the June deadline came, all EPA had decided was that, “for now,”¹¹² it would move forward with developing EEMs for all pollutants and all source categories, even while holding out the possibility that “emission source categories might be revised during subsequent stages of EEM development” upon further investigation.¹¹³ In other words, instead of making any real effort to narrow the scope of feasible EEMs, as OIG intended, the Agency simply made a placeholder determination to proceed as originally planned to check an item off its OIG to-do list. Conveniently, this also allowed EPA to hold off on implementing another OIG action—ending enforcement amnesty for affected Air Consent Agreement participants—since only a finalized decision to abandon certain EEMs could trigger this requirement.¹¹⁴ However, this did not stop the Office of Enforcement and Compliance Assurance from certifying that this action, which has yet to occur, was “complete.”¹¹⁵

Moreover, because EPA opted to move forward with the development of all originally planned EEMs, EPA was required to “set public milestone dates” for issuance of all draft EEMs

¹⁰⁹ See Memorandum from W. Wehrum, Assistant Administrator, OAR-18-000-9472 - *Certification Memo for Office of Inspector General (OIG) Report No. 17-P-0396* (July 30, 2018) ED_004549_00036447-00001 (certifying completion of OAR corrective actions); M. Badalamente, *Certification of Performance Audit* (Apr. 2, 2019) ED_004549_00036462-00001 (certifying completion of OECA corrective action) [hereinafter OECA Certification Memo].

¹¹⁰ See 2018 QAPP at 14.

¹¹¹ 2017 OIG REPORT at 23.

¹¹² Email from Tim Sullivan to Lauren Kabler Re: 2017 OIG Report, ED_005459-00036448-00003 (Sep. 20, 2018).

¹¹³ 2018 QAPP at 16.

¹¹⁴ 2017 OIG REPORT at 23.

¹¹⁵ OECA Certification Memo at 1-2 (paradoxically stating OECA’s action is “complete” because OECA stands ready to implement it “within 60 days of OAR finalizing its determination”).

and to keep the public informed of the status of EEM development.¹¹⁶ While EPA did set publicly available issuance dates (yet another box checked), it has made no effort to meet these self-imposed deadlines. In fact, every time a deadline nears, the Agency updates the schedule to give itself more time. In the agency's revised schedule for developing EEMs, EPA committed to issuing draft EEMs beginning in September 2019 and ending no later than November 2020.¹¹⁷ However, after revising the schedule more than five times in just two years, with the most recent schedule slide occurring just this past August, EPA now lists the date for issuing all draft EEMs as May 2022.¹¹⁸ While OIG required EPA to "set public milestone dates," it surely did not intend for EPA to push back the dates whenever the agency failed to meet an upcoming deadline. The purpose of the updated schedule was to prevent continued delay and uncertainty regarding EPA's development process. As of the date of this letter, EPA continues to delay the EEMs and fall behind its own updated timeline.

V. EPA SHOULD TERMINATE THE AIR CONSENT AGREEMENT BECAUSE EPA HAS FAILED TO PRODUCE VALID EEMs.

A. EPA Should Abandon the Fundamentally Flawed NAEMS and EEMs Development Process in Favor of Existing Models.

As discussed above, EPA cannot rely on the NAEMS data collected at 20 AFOs from because these data are not representative of current emissions from AFOs across the country. At this stage in the EEM development process, EPA cannot correct the flaws in NAEMS and EEM design or implementation. And although EPA has acknowledged the issues limiting the applicability of the data and affecting its current efforts to establish legitimate EEMs, it has failed to sufficiently address those issues. Moreover, EPA already has process-based models and emissions factors that it can use for the purposes of estimating emissions from AFOs and making compliance determinations. Where such methods are available, EPA should immediately adopt the methods as the default EEMs.

¹¹⁶ 2017 OIG REPORT at 23.

¹¹⁷ See Archived EPA Webpage: *National Air Emissions Monitoring Study* (Jul. 3, 2018), <http://web.archive.org/web/20180703144202/https://www.epa.gov/afos-air/national-air-emissions-monitoring-study>.

¹¹⁸ See EPA, *National Air Emissions Monitoring Study* (last visited 10/22/2021) <https://www.epa.gov/afos-air/national-air-emissions-monitoring-study>.

In 2013, nearly a decade ago, EPA’s Science Advisory Board recommended that the EPA “consider developing EEMs at a variety of levels of complexity to provide options for producers with different levels of data availability.”¹¹⁹

Models of varying complexity should be developed based on the level of input provided by a given producer (e.g., one model may be developed considering the composition of a feed ration, while a less complex model using default industry values could be used if a producer does not wish to or cannot disclose information regarding feed rations).¹²⁰

This SAB recommendation is critical. As discussed above, data limitations often make the implementation of EEMs impractical or impossible. To implement the 2020 and 2021 draft EEMs for swine and poultry AFOs, AFO operators would essentially have to run multiple statistical models for each emissions source, each day of the year, using actual daily data points, like animal inventory, average animal weights, ambient air temperature, and wind speed, to estimate annual emissions.¹²¹ This is problematic in at least two ways. First, it would be difficult for potential sources and regulators to acquire and process the large amount of data required to generate annual emissions estimate. Second, since the draft EEMs require actual input data, they cannot readily be used to estimate future emissions from proposed (or existing) sources.

The current forms of the EEMs are thus inconsistent with the CAA, which asks proposed and existing sources to provide emissions estimates in the form of annual emission potential (an upper-bound estimate that does not require daily model iterations).¹²² EPA therefore needs EEMs that utilize default assumptions. The SAB strongly recommended this approach, but EPA unfortunately continues to ignore it.¹²³

EPA has also recommended this simplified approach in other contexts. For example, in 2019, EPA published guidance for estimating animal waste emissions for purposes of complying

¹¹⁹ 2013 SAB REPORT at 2, 4.

¹²⁰ *Id.* at 14

¹²¹ *Id.*

¹²² If implemented, the 2020 Draft EEMs for Swine AFOs would not produce Potential to Emit (PTE) estimates. These estimates provide critical information in determining how the CAA applies at a given facility, and if a facility is a “major source.” The draft EEMs instead prescribe the use of actual animal inventories and will not determine if facilities are “major sources” as required.

¹²³ 2013 SAB REPORT at 14 (“The EPA should create a modeling approach that can be defined using default parameters that can be simply attained and that would reflect the heterogeneity of AFOs.”).

with CERCLA and EPCRA.¹²⁴ Some of the methods recommended in this guidance were simple emissions factors (e.g., pounds per animal per day).¹²⁵ Other recommended methods were in the form of worksheets that used a combination of site-specific information (e.g., animal housing type and maximum permitted capacity) and default parameters (e.g., animal-specific nitrogen excretion rates and ammonia loss factors). The worksheets are notable for two reasons. First, the worksheets generate “peak” pollutant emissions, based on maximum/permitted animal capacity, which is consistent with CAA “potential to emit” requirements. Second, the worksheets are easy to implement with limited data because they incorporate default parameters.

In sum, EPA already estimates emissions, and recommends that others do so, using methods that are consistent with the CAA and SAB guidance and are easy to implement. Yet it continues to insist on developing flawed EEMs that fail all of these criteria. This is flagrantly arbitrary and unreasonable, and only serves one purpose—to continue to protect a large source of air pollution from regulation.

B. EPA Overstates the Difficulty of Developing Process-Based Models, Which the Agency Is Already Using in Other Contexts.

Since the beginning of the EEM development process, the scientific community has recommended that EPA pursue a process-based approach. In 2003, the National Academies of Sciences (NAS) concluded that the “use of process-based modeling will help provide scientifically sound estimates of air emissions from AFOs for use in regulatory and management programs.”¹²⁶ Ten years later, in 2013, EPA’s Science Advisory Board made the same recommendation.¹²⁷ Today, nearly two decades after the NAS first recommended a process-based approach, and despite the fact that EPA is already using process-based models in other contexts, EPA maintains that it cannot yet develop process-based EEMs.

¹²⁴ EPA, *CERCLA & EPCRA Reporting Requirements for Air Releases of Hazardous Substances from Animal Waste at Farms*, EPA (last visited Aug. 27, 2021), <https://www.epa.gov/epcra/cercla-and-epcra-reporting-requirements-air-releases-hazardous-substances-animal-waste-farms>.

¹²⁵ See, e.g., EPA, *Calculation Worksheet: Ammonia and Hydrogen Sulfide from Dairy Operations* (2009) available at https://www.michigan.gov/documents/deq/deq-ess-cafo-worksheet-dairyemissions_266406_7.pdf.

¹²⁶ NAT’L RSCH. COUNCIL, *AIR EMISSIONS FOR ANIMAL FEEDING OPERATIONS: CURRENT KNOWLEDGE, FUTURE NEEDS*, 103 (2003).

¹²⁷ 2013 SAB REPORT at 10-13.

EPA concedes that its statistical approach is flawed, and now describes the statistical approach as an “interim” solution until more reliable process-based models can be developed.¹²⁸ EPA suggests that this approach “follow[s] the expert recommendations and [is] consistent with the Air [Consent] Agreement.”¹²⁹ This is simply not true—EPA is *not* following the Air Consent Agreement or the SAB recommendations, both of which emphasize the need for data from outside of NAEMS. The SAB reminded EPA that process-based models would require the Agency to consider outside information:

Developing a rigorous process-based EEM will require extensive data beyond the range of values, conditions, and types of farms available in the NAEMS data set. To address this data gap the EPA should consider using data collected through mechanisms outside the consent agreement, including data published in peer-reviewed literature, raw data from key studies, data that support key literature, and additional data that the EPA has collected since receiving data in response to the Call for Information on AFOs and emissions.¹³⁰

EPA has not done this. The delay in developing process-based EEMs is almost entirely due to EPA’s failure to collect or consider the necessary data.

More broadly, it is important to consider EPA’s track record. EPA’s chosen course of action, developing interim statistical models, has already taken more than 16 years and is *still* not complete. If this is EPA’s *interim* solution, how many more decades will it take before EPA can meet its “long term” goals of developing process-based EEMs? At this rate, the industry is changing faster than the EEM development process, and whatever EPA develops will immediately be outdated. Given EPA’s history of protracted delay, it makes no sense to continue developing flawed “interim” EEMs while EPA contemplates a plan for someday, maybe developing legitimate EEMs. The problem of air pollution from AFOs deserves actual solutions, not more wheel-spinning.

Developing process-based models will not require more time than completing its flawed statistical models. EPA is already using process-based models (and other models) to estimate AFO emissions and has acknowledged that process-based models accurately predict NAEMS

¹²⁸ See, e.g., 2020 Draft EEMs for Swine Barns & Lagoons at 1-8 to 1-9.

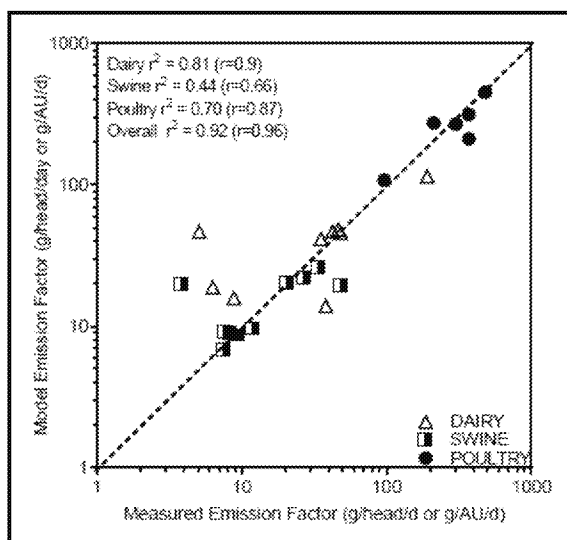
¹²⁹ *Id.* at 1-8.

¹³⁰ 2013 SAB REPORT at 14.

emissions based on NAEMS input data. Ironically, although EPA claims to be interested in any “suitable model[s] available in literature to use,”¹³¹ it ignores the high-quality process-based model being used *by EPA* in its National Emissions Inventory (NEI).

As part of its NEI, the Agency estimates ammonia emissions from dairy, beef, poultry, and swine operations using a process-based model developed by Carnegie-Mellon University (CMU).¹³² This model has been evaluated against NAEMS monitoring data, and one author observed that “the process-based [Farm Emissions Models] perform reasonably well in predicting the magnitude of ammonia emissions, their seasonal cycle, and farm-to-farm variability.”¹³³ It is particularly noteworthy that the CMU model “was able to differentiate between farms and practice,” as shown in the figure below.¹³⁴

Figure 1: Comparison of Process-Based Model Predictions and NAEMS Monitoring Data



¹³¹ 2018 QAPP at 19.

¹³² EPA, 2017 NATIONAL EMISSIONS INVENTORY: JANUARY 2021 UPDATED RELEASE, TECHNICAL SUPPORT DOCUMENT 4-61 (2021); A. McQuilling & P. Adams, *Semi-Empirical Process-Based Models For Ammonia Emissions From Beef, Swine, & Poultry Operations In The United States*, 120 ATMOS. ENVTL. 127 (Nov. 2015).

¹³³ A. McQuilling, *Ammonia Emissions from Livestock in the United States: From Farm-Level Models to a New National Inventory*, at 51 (Jan. 2, 2016) (Ph.D dissertation Carnegie Mellon University), [https://kilthub.cmu.edu/articles/thesis/Ammonia Emissions from Livestock in the United States From Farm-Level Models to a New National Inventory/6714665](https://kilthub.cmu.edu/articles/thesis/Ammonia_Emissions_from_Livestock_in_the_United_States_From_Farm-Level_Models_to_a_New_National_Inventory/6714665).

¹³⁴ *Id.* at 75, 80.

As explained by the author, “this result shows the model’s skill in capturing big picture emissions as well as the ammonia emissions variability driven by practices in addition to meteorology which has been shown in both seasonal and daily evaluations.”¹³⁵

Another model that EPA at least acknowledges is the U.S. Department of Agriculture’s Farm Systems Model, which includes process-based models for estimated ammonia and hydrogen sulfide emissions from dairy operations. The model has even been shown to accurately predict ammonia emissions from NAEMS dairy barns and manure storage structures.¹³⁶

If these models are good enough for EPA’s emissions inventory and do a reasonable job of predicting NAEMS emissions, then they should be good enough for estimating emissions from AFOs for the purpose of applying for CAA permits or reporting qualifying releases. For example, if the question is whether a facility emits more than a certain threshold, such as 10 or 100 tons of ammonia per year,¹³⁷ then the CMU model is sufficient. This is particularly true where we already know that many AFOs emit well above the higher threshold.¹³⁸

EPA’s foot-dragging is based on the deeply flawed premise that the Agency won’t know how much pollution AFOs emit until after the agency’s planned EEMs are complete. This premise is false. EPA has a variety of options for estimating emissions, and these options are in fact better than the EEMs—they are more consistent with CAA requirements and SAB recommendations, and they are accurate enough to provide the kinds of information that the industry, regulators, and residents need to comply with the law. EPA has no legitimate basis for dragging this process out any longer.

¹³⁵ *Id.* at 80.

¹³⁶ 2018 QAPP at 19; *see also* C. Rotz et. al., *Ammonia emission model for whole farm evaluation of dairy production systems*, 43 J. ENV’T. QUAL. 1143 (2014).

¹³⁷ *See, e.g.*, 42 U.S.C. §§ 7412(a)(1) (definition of “major source” of hazardous air pollutants); § 7479(1) (definition of “major emitting facility”); § 7602(j) (definition of “major emitting facility”).

¹³⁸ *See, e.g.*, Notice of Lodging of Consent Decree Under CERCLA, 69 Fed. Reg. 11,649 (Mar. 11, 2004). The company subject to this Consent Decree, Buckeye Egg Farm L.P., reported ammonia emissions of over 800 tons per year from one facility, over 375 tons per year from a second facility, and “nearly 275” tons per year from a third facility. *Id.* at 11,649–50.

VI. IF EPA DECIDES TO PROCEED WITH THE FLAWED EEM DEVELOPMENT PROCESS, IT MUST IMMEDIATELY RESCIND THE SAFE HARBOR PROVISION.

As explained above, EPA's failure to regulate air pollution from AFOs causes both significant health impacts and a dearth of information available to impacted individuals about pollutant releases and impacts. Additionally, AFO air pollution and the resulting odors are diminishing the quality of life and depressing property values in communities across the nation.¹³⁹ EPA must immediately rescind the enforcement protections granted to AFOs. In addition, EPA must rely on external sources and public input when developing any draft EEMs based on the agency's inherently flawed monitoring data and development process.

A. EPA Should Immediately Rescind the Safe Harbor Provisions of the Air Consent Agreement.

Although EPA has the authority to rescind the safe harbor provisions of the Air Consent Agreement at any time, it has refused to do so, choosing instead to grant extended immunity to AFOs that emit significant air pollution and cause adverse public health impacts in surrounding communities. EPA's continued refusal to enforce the law against AFOs is an abdication of its enforcement authority. It contradicts congressional intent and strips affected communities of their legal and procedural remedies to address increased air emissions from AFOs. Thus, EPA should take immediate action to rescind the safe harbor provisions of the Air Consent Agreement.

B. EPA Should Not Finalize Any EEMs Without Robust Public Participation.

If EPA proceeds with its protracted EEM development process, it must prioritize public participation. During the decades-long process of developing the EEMs, the Agency has primarily engaged the AFO industry. EPA intends to hold a "stakeholder review period" once new draft EEMs are available but the timing of this review period is currently unknown.¹⁴⁰ It is

¹³⁹ See, e.g., Y. HONG & P. EBNER, PURDUE ANIMAL SCIENCES, IMPACT OF CFO ODOR & ODOR SETBACK MODELS, (JAN. 2017), https://ag.purdue.edu/cfo/Documents/ID-485_CFO_2017.pdf; ROMAN KEENEY, PURDUE EXTENSION, COMMUNITY IMPACTS OF CAFOS: PROPERTY VALUES (2008), <https://www.extension.purdue.edu/extmedia/ID/ID-363-W.pdf>.

¹⁴⁰ See EPA, *National Air Emissions Monitoring Study: Timeline for the Release of AFO Emission Models*, (last visited Oct. 25, 2021), <https://www.epa.gov/afos-air/national-air-emissions-monitoring-study>.

unclear who EPA considers “stakeholders” in this process, but presumably this “stakeholder review period” involves EPA releasing all EEMs simultaneously for a 30-day public comment period. This would be a wholly inadequate means to engage the public, especially in comparison to the extensive influence that industry groups have had throughout the EEMs process. A robust notice and comment opportunity is necessary to meaningfully engage *all* stakeholders and ensure that the EEMs do not exacerbate health impacts and inequalities.

Rural communities experiencing the detrimental effects of AFOs lack access to complete information about the impacts and regulation of AFOs, and rarely are provided with a forum to voice their concerns and seek remedies from the government. Rather, EPA has frequently used the EEMs process as a shield to avoid meaningfully responding to and acting on AFO air pollution concerns raised with the Agency. A transparent and accessible notice and comment period for the EEMs will provide a necessary—albeit much-delayed—opportunity for the Agency to hear from the stakeholders most impacted by EPA’s decisions regarding EEMs.

Furthermore, the complexity and abstract nature of environmental modeling presents unique and significant barriers to full public participation.¹⁴¹ EPA should take steps to overcome and mitigate these barriers. For example, a comment period of 90 days would provide impacted communities and advocacy groups the time needed to assess the impacts of the EEMs and engage in outreach to ensure that all interested parties are aware and informed. The complex nature of the EEMs also means that groups and members of the public likely will need to engage experts to review the EEMs and develop technical comments, necessitating a longer comment period. EPA should also hold public listening sessions with content aimed at meaningfully engaging the public in EEMs development, such as layperson explanations of the process of developing the EEMs and the EEMs’ impacts and limitations. Similarly, EPA should ensure members of the public are able to hear each other’s comments.

¹⁴¹ See generally J. Fine & D. Owen, *Technocracy & Democracy: Conflicts Between Models & Participation in Environmental Law & Planning*, 56 HASTINGS L.J. 901 (2005), https://repository.uchastings.edu/cgi/viewcontent.cgi?article=3590&context=hastings_law_journal.

Robust public participation in the finalization of any EEMs is also necessary for EPA to comply with the President’s Executive Orders pertaining to environmental justice.¹⁴² AFO air pollution is an environmental justice issue—“people of color and others who have been historically underserved, marginalized, and adversely affected by persistent poverty and inequality” are far more likely to be exposed to AFO air pollution and suffer the health, quality of life, and financial consequences.¹⁴³ The Biden Administration has pledged to make environmental justice a priority and directed EPA to “assess whether, and to what extent, its programs and policies perpetuate systemic barriers to opportunities and benefits for people of color and other underserved groups.”¹⁴⁴ Agencies are further tasked with “evaluat[ing] opportunities, consistent with applicable law, to increase coordination, communication, and engagement with community-based organizations and civil rights organizations.”¹⁴⁵ The finalization of the EEMs is an important opportunity for EPA to advance these objectives, and the failure of EPA to ensure meaningful public participation in the EEMs would contravene the Administration’s directives.

The petitioners, as well as many other groups that work with rural communities impacted by AFOs, also could provide EPA with valuable information and context. Two petitioners are environmental justice organizations, which work with communities adversely affected by AFO air pollution, including in North Carolina and California. Many of the petitioners have sought to engage with EPA on the issue of air pollution from AFOs for well over a decade, including challenging the Agreement at the EAB and in the D.C. Circuit, submitting the 2009 CAFO Source Petition, and submitting the 2011 Ammonia Petition. The petitioners have also extensively worked with, and represented in legal actions, members of communities directly

¹⁴² See Exec. Order No. 13985, Advancing Racial Equity & Support for Underserved Communities Through the Federal Government, 86 Fed. Reg. 7009 (Jan. 25, 2021), <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC1817697/pdf/chp0115-000317.pdf>.

¹⁴³ See *id.* See also 2017 OIG REPORT at 3, see also K. Donham et al., *Community Health & Socioeconomic Issues Surrounding Concentrated Animal Feeding Operations*, 115 ENV’T. HEALTH PERSPECTIVES (2007).

¹⁴⁴ Exec. Order No. 13985; see also Exec. Order 12898, Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations, 59 Fed. Reg. 7629 (Feb. 16, 1994) (“[E]ach Federal agency shall make achieving environmental justice part of its mission by identifying and addressing, as appropriate, disproportionately high and adverse human health or environmental effects of its programs, policies, and activities on minority populations and low-income populations. . .”).

¹⁴⁵ Exec. Order No. 13985.

impacted by AFO pollution. Therefore, the petitioners possess extensive expertise that would be valuable in the process of finalizing the EEMs.

VII. CONCLUSION

The Air Consent Agreement has been an unmitigated failure. During EPA's extended amnesty and fundamentally inadequate NAEMS process, jurisdictions like California have estimated emissions and permitted AFOs with readily available data.¹⁴⁶ The SAB has demonstrated that EPA's NAEMS and EEM development processes reflect the principle of "garbage in, garbage out." EPA has blown far past its 2007 "limited" deferral representation to the D.C. Circuit and its 2017 response to the OIG, landing rural communities in a purgatory of legalized air pollution. Further delay only demonstrates EPA's abdication of its enforcement responsibility and will not yield a better outcome.

We support EPA efforts to develop state-of-the-art and accurate emissions estimating methodologies, but that process should never have been used to shield the industry from enforcement, and in any case, it is well past the time when the NAEMS and EEM process could justify a temporary suspension of applicable law. The reality is that facts and science change over time, and emissions assumptions will also change over time. There is no end to that process. However, EPA can, and routinely does, estimate emissions from many sources of air pollution, including AFOs, using the best science available. The Agency must do the same here. EPA must end the Air Consent Agreement, immediately publish the best currently available emissions methods or emissions factors for each pollutant, and enforce the CAA.

The petitioners therefore petition EPA to rescind the Air Consent Agreement granting enforcement protections to nearly 14,000 AFOs. In addition to a written response confirming the agency's rescission of the Air Consent Agreement, we petition EPA to act immediately to implement CAA permitting and reporting programs, prioritize enforcement actions against AFOs contributing to air pollution and related health impacts in environmental justice communities, and develop process-based models unbound from an unending license to pollute.

¹⁴⁶ EPA, based on its CAA oversight, has actual knowledge of jurisdictions like California, including the San Joaquin Valley Unified Air Pollution Control District, with AFO permitting programs and State Implementation Plan programs applicable to such facilities.

Date: October 26, 2021

Respectfully Submitted,

Cristina Stella
Larissa Liebmann
Animal Legal Defense Fund
525 East Cotati Avenue
Cotati, CA 94931
cstella@aldf.org
lliebmann@aldf.org

Hannah Connor
Center for Biological Diversity
1411 K St. NW, Suite 1300
Washington, DC 20005
HConnor@biologicaldiversity.org

Amy van Saun
Center for Food Safety
2009 NE Alberta St., Suite 207
Portland, OR 97211
AvanSaun@CenterforFoodSafety.org

Abel Russ
Environmental Integrity Project
100 Vermont Avenue NW, Suite 1100
Washington, DC 20005
aruss@environmentalintegrity.org

Tarah Heinzen
Emily Miller
Food & Water Watch
1616 P St. NW, Suite 300
Washington, DC 20036
theinzen@fwwatch.org
eamiller@fwwatch.org

Brent Newell
Public Justice Foundation
1620 L St. NW, Suite 630
Washington, DC 20036
bnewell@publicjustice.net

On behalf of Petitioners

Message

From: Lisa Reed [lreed@publicjustice.net]
Sent: 4/6/2021 2:38:27 PM
To: Regan, Michael [Regan.Michael@epa.gov]
CC: Martin, KarenL [Martin.KarenL@epa.gov]; Ramoncita.C.Martinez@ceq.eop.gov; Engelman-Lado, Marianne [EngelmanLado.Marianne@epa.gov]; Hoffer, Melissa [Hoffer.Melissa@epa.gov]; Minter, Marsha [Minter.Marsha@epa.gov]; Carbonell, Tomas [Carbonell.Tomas@epa.gov]; Shaw, Betsy [Shaw.Betsy@epa.gov]; Goffman, Joseph [Goffman.Joseph@epa.gov]; Garbow, Avi [Garbow.Avi@epa.gov]; Brent Newell [bnewell@publicjustice.net]
Subject: Petition to List Industrial Dairy and Hog Operations as Source Categories Under Section 111(b)(1)(A) of the Clean Air Act
Attachments: 2021.04.06 FINAL Cover Letter to EPA.pdf; 2021.04.06 Industrial Dairy and Hog CAA 111 Petition FINAL.pdf

Dear Mr. Regan,

Please see the attached Letter and Petition to List Industrial Dairy and Hog Operations as Source Categories Under Section 111(b)(1)(A) of the Clean Air Act.

Respectfully submitted,
Lisa Reed for Brent Newell



PUBLIC JUSTICE
FOOD PROJECT

Lisa Reed
Food Project Paralegal
Pronouns: she/her
Office direct: (202) 861-5224
1620 L Street NW, Suite 630,
Washington, DC 20036
lreed@publicjustice.net
publicjustice.net

Twitter: @public_justice
Facebook: /publicjustice

Help Us Fight for a Just Food System. [Support the work of the Public Justice Food Project Today!](#)

BEFORE THE UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
PETITION TO LIST INDUSTRIAL DAIRY AND HOG OPERATIONS AS SOURCE CATEGORIES
UNDER SECTION 111(b)(1)(A) OF THE CLEAN AIR ACT

INTRODUCTION

All Americans deserve clean air and water, a stable climate, and to live in healthy and sustainable communities. And President Biden has committed to act on climate, follow the science, and place environmental justice at the center of climate policy. EPA should therefore list and regulate industrial dairy and hog operations under section 111 of the Clean Air Act because these operations cause and contribute significantly to air and climate pollution that endangers public health and welfare. Over the past few decades, these operations have dramatically grown in size and number while simultaneously spewing unabated and increasing air pollution, including methane, a climate super pollutant, while driving smaller, sustainable, pasture-based farmers out of business. The proliferation of this corporate-controlled model has hollowed out and impacted Black, Latino, Indigenous, and other communities of color, as well as white rural communities, from the coastal plain of North Carolina to the San Joaquin Valley of California. And the U.S. Environmental Protection Agency has stood idly by for more than twenty years while communities suffer the consequences. But now the Biden Administration and an EPA that no longer prioritizes polluters over people have an opportunity to stand with these communities, advance environmental justice, follow the science, and Build Back Better a system of agriculture that behaves like a good neighbor and helps restore our land, air, and water. Taking that stand and delivering on recent promises begins with the EPA granting this Petition.

This Petition urges EPA to regulate industrial dairy and hog operations that liquefy manure and confine at least 500 cows or 1,000 hogs without access to pasture. These operations stock far more animals in confinement than would otherwise be sustainably farmed on pasture and thus generate massive amounts of manure and waste. To deal with the massive increase in manure, the corporate-controlled pork and dairy industry concocted a system of liquefying the manure and storing it in football field-sized impoundments before disposing the manure on nearby crop fields. These intentionally created super-emitters release methane from the liquefied manure in those giant lagoons and the animals' digestive systems. The methane from these industrial dairy and hog operations has increased dramatically during recent decades and now

accounts for 33 percent of agricultural methane emissions, 13 percent of total U.S. methane emissions, and 1.3 percent of total U.S. greenhouse gas emissions.

This unabated methane pollution has not gone unnoticed. Recently, Big Oil & Gas have smelled opportunity and developed a scheme to continue the use of their products – fossil fuels – and greenwash their business model. Seizing on the false solution of factory farm gas “energy” from liquefied manure in anaerobic digesters, Big Oil & Gas want to burn factory farm gas to make their fossil fuel climate impact seem less severe. But burning factory farm gas and fossil fuels does not reflect the clean energy economy that America, especially rural and communities of color, need to stabilize our climate. Constructing pipelines through rural communities, expanding industrial dairy and hog operations, and increasing air and water pollution leads us further away from the future our communities deserve. The tried and true approach of sustainably raising far fewer dairy cattle and hogs on pasture provides a myriad of benefits far greater than Big Oil & Gas’s false and dirty solution. To minimize those benefits and avoid the harms of industrial dairy and hog operations, this petition urges the EPA to reject the false solution of burning factory farm gas and instead rely on proven, pasture-based farming with reduced, sustainable herd sizes that will restore rural communities, help stabilize the climate, and provide environmental justice. And communities deserve healthy and affordable food that does not come at the expense of their health and welfare, so Building Back Better also means equity and justice at the grocery store.

The twenty-five Petitioners here represent over 2.4 million members from coast to coast. Our members and rural communities want respect, dignity, clean air and water, and a livable climate. Our well-being and that of future generations depend on the EPA fulfilling its duty to protect people. Industrial hog and dairy operations have hollowed out rural communities, gutted Main Street, and driven family farmers off their land. Big Oil & Gas clings to their use of fossil fuels despite that massive pollution. Doubling down on their corporate schemes will not Build Back Better; it will not revitalize rural America, family farmers, local grocery and hardware stores, our Main Street economy, or our climate. Rather than wasting millions of dollars on a system that requires harming people and polluting our communities, the EPA can grant this petition and choose what already works. Truly clean and sustainable energy solutions, like wind and solar, combined with food production led by local family farmers, will allow future

generations to enjoy a livable climate and clean air and water. EPA should grant this Petition and stand with family farmers and local communities committed to sustainable farming and truly clean, renewable energy.

Environmental justice principles also demand the EPA grant this Petition. The Biden Administration has committed to environmental justice, while preceding administrations have fallen far short. On January 27, 2021, President Biden signed the Executive Order on Tackling the Climate Crisis at Home and Abroad, and section 219 of that Order commits the Administration to placing environmental justice at the center of climate policy. The President stated, “[i]t is therefore the policy of my Administration to secure environmental justice and spur economic opportunity for disadvantaged communities that have been historically marginalized and overburdened by pollution[.]” Racism and exploitation reflect the status quo in communities harmed by industrial dairy and hog operations and Big Oil & Gas. Black communities in North Carolina and Latino communities in California bear a disproportionate impact from air and water pollution, and from climate impacts such as catastrophic wildfires and more intense hurricanes. The EPA can and should provide every person the opportunity to live, work, play, and pray in a healthy and sustainable community. Being good neighbors and treating the soil, air, water, land, and everyone in our communities as connected and valued is the key to EPA doing its part to Build Back Better.

Building Back Better starts with EPA granting this Petition. EPA has the duty and authority to regulate these methane super-emitters under the Clean Air Act as part of the Administration’s larger strategy to prevent catastrophic and irreversible climate change. On the first day of his administration, President Biden issued the Executive Order on Protecting Public Health and the Environment and Restoring Science to Tackle the Climate Crisis. Section 1 of the Order declares:

It is, therefore, the policy of my Administration to listen to the science; to improve public health and protect our environment; to ensure access to clean air and water; to limit exposure to dangerous chemicals and pesticides; to hold polluters accountable, including those who disproportionately harm communities of color and low-income communities; to reduce greenhouse gas emissions; to bolster resilience to the impacts of climate change; to restore and expand our national treasures and monuments; and to prioritize

both environmental justice and the creation of the well-paying union jobs necessary to deliver on these goals.

As this Executive Order directs, EPA should list industrial dairy and hog operations under Clean Air Act section 111 of the Act as sources that cause or contribute significantly to dangerous pollution. Within one year of listing, EPA must issue regulations to reduce methane from such new and existing operations. And EPA should reject factory farm gas – branded as “biogas” by Big Oil & Gas – as dirty energy and a false solution. Because pasture-based farms mean reduced herd sizes and avoided methane emissions, while providing myriad co-benefits, EPA should base subsequent regulations on the emission reductions achievable with widespread application of sustainable, pasture-based practices. Pasture-based operations not only significantly reduce methane, they also remove carbon dioxide from the atmosphere through healthy soils, reduce nitrous oxide emissions from feed crops and manure disposal, reduce water pollution, and decrease odors and other harmful air pollutants in local communities. The EPA should thus grant this Petition, reject dirty and harmful factory farm gas, truly place environmental justice at the center of climate policy, and Build Back Better.

TABLE OF CONTENTS

INTRODUCTION	1
TABLE OF CONTENTS.....	5
I. NOTICE OF PETITION.....	7
II. PETITIONERS	8
III. STATUTORY BACKGROUND.....	11
A. EPA has expansive authority to list industrial dairy and hog operations under section 111 of the Clean Air Act.....	11
1. New Source Performance Standards.....	12
2. Emission Guidelines for Existing Sources.....	13
B. Although EPA has regulated other sources of GHG emissions under section 111, EPA took final action and declined to determine whether to list concentrated animal feeding operations.	15
1. EPA’s Rulemakings on GHG Emissions.....	15
2. EPA’s Final Action Declining to Determine the Petition to Regulate GHG Emissions from CAFOs	16
IV. FACTUAL BACKGROUND.....	17
A. Climate Change.....	17
1. Public Health.....	17
2. Public Welfare	17
B. Expansion of Industrial Dairy and Hog Operations.....	18
1. Industrial Dairy	19
2. Industrial Hog	21
C. Industrial dairy and hog operations emit significant amounts of methane and other air pollutants.....	24
1. Enteric Fermentation.....	24
2. Manure Management	25

D.	Methane emissions from industrial hog and dairy operations have a substantial impact on climate change.....	27
1.	Contribution to Total GHG Levels	29
2.	Notable Short-Term Climate Change Impacts.....	29
V.	DISCUSSION.....	30
A.	Industrial hog and dairy operations are source categories under section 111 of the Clean Air Act.	31
1.	Industrial hog and dairy operations are “stationary sources” of methane and other air pollutants.	31
2.	Industrial hog and dairy operations satisfy the requisite standard for listing a source category under section 111.	37
B.	EPA must reconsider its final action that decided not to determine whether to list industrial hog and dairy operations as source categories of methane under section 111.....	48
1.	EPA is not currently developing emission estimation methodologies for methane.	49
2.	Existing methane emission estimation methods are reliable.	50
C.	EPA can significantly reduce methane emissions from industrial hog and dairy operations by setting standards based on pasture-based systems.	51
1.	Pasture-based production is the best system of emission reduction.	53
2.	Factory Farm Gas is a false solution.....	64
	CONCLUSION.....	72

I. NOTICE OF PETITION

The Association of Irrigated Residents, Center for Food Safety, Center on Race, Poverty & the Environment, Dakota Rural Action, Environmental Integrity Project, Farm Forward, Food & Water Watch, Friends of Family Farmers, Friends of the Earth, Great Lakes Environmental Law Center, Government Accountability Project, GreenLatinos, Idaho Organization of Resource Councils, Institute for Agriculture and Trade Policy, Iowa Citizens for Community Improvement, Johns Hopkins Center for a Livable Future, Land Stewardship Project, Leadership Counsel for Justice & Accountability, Missouri Rural Crisis Center, North Carolina Environmental Justice Network, Northeast Organic Farming Association, Massachusetts Chapter, Organic Consumers Association, Public Justice Foundation, Sierra Club, and Socially Responsible Agriculture Project petition the U.S. Environmental Protection Agency to fulfill its obligation under section 111 of the Clean Air Act to list industrial dairy and hog operations as source categories of methane that endanger public health and welfare. After EPA has listed these source categories, EPA shall establish (1) national standards to reduce methane emissions from new and modified sources within these source categories; and (2) requirements for state-specific standards to reduce methane emissions from existing sources.

Industrial dairy and hog operations rely on confinement production facilities with liquefied manure management systems to maximize production at the expense of independent farmers, local communities, public health, and the environment. Although industrial dairy and hog operations emit significant amounts of methane and other air pollutants, EPA has failed to regulate any emissions from these operations.¹ By failing to list these source categories, EPA is breaching its clear statutory duty under section 111 to maintain a list of source categories, establish emissions standards for new and modified sources within these source categories, and develop guidelines for states to issue emission standards for existing sources. Further, EPA's inaction is exacerbating climate change risks and endangering public health and welfare.

Accordingly, we file this Petition to urge EPA to list industrial dairy and hog operations as stationary sources of methane pursuant to section 111 of the Act. Specifically, we respectfully petition EPA to initiate rulemaking on the following required actions:

- Find that industrial dairy and hog operations with (1) fully confined production facilities for 500 or more dairy cows or 1,000 or more hogs, and (2) liquefied manure management systems are stationary sources that cause or contribute significantly to air pollution that endangers health and welfare;
- Although not required by statute, and irrespective of other pollutants from these industrial dairy and hog operations, find that methane emissions specifically cause or contribute significantly to air pollution that endangers public health and welfare.
- Consistent with the prior findings, list industrial dairy and hog operations as source categories subject to regulation under section 111(b)(1)(A);

¹ See U.S. EPA, Denial of Petition to List Concentrated Animal Feeding Operations under Clear Air Act, 82 Fed. Reg. 60940 (Dec. 26, 2017) (notice of final action denying petition for rulemaking).

- Within one year of the listing decision, promulgate standards of performance to reduce methane emissions from new and modified sources within the listed industrial dairy and hog source categories, as required under section 111(b)(1)(B); and
- Within one year of the listing decision, promulgate guidelines for states to develop standards of performance to reduce methane emissions from existing sources within these source categories, as required under section 111(d)(1).

II. PETITIONERS

The Petitioners are local, regional, and national environmental justice and public interest organizations committed to stabilizing our climate crisis, reforming harmful industrial animal agricultural practices, and advocating for a more just, humane, and regenerative animal agriculture system.

Association of Irrigated Residents is a California nonprofit advocating for environmental justice in the areas of clean air, water quality and global warming as in the San Joaquin Valley. Members live in close proximity to hundreds of industrial dairy operations, which impact their ability to enjoy clean air, a safe water supply, and a zero carbon energy and food system.

Center for Food Safety is a national nonprofit organization that aims to empower people, support farmers, and protect the earth from the harmful impacts of industrial agriculture. Through groundbreaking legal, scientific, and grassroots action, Center for Food Safety protects and promotes everyone's right to safe food and the environment.

Center on Race, Poverty & the Environment (CRPE) is a nonprofit environmental justice organization with the mission to achieve environmental justice and healthy sustainable communities through collective action and the law. CRPE represents predominately Latino communities in the San Joaquin Valley to reduce impacts of climate change and health harming pollution from industrial dairy operations.

Dakota Rural Action is a statewide grassroots organization in South Dakota with a history of working on environmental, agricultural, and justice issues. Dakota Rural Action specifically has worked with citizens and communities to insure people have a say in the siting of concentrated animal feeding operations (CAFOs) in their communities and to ensure the state does not take away rights from people.

Environmental Integrity Project (EIP) is a nonpartisan, nonprofit organization that advocates for more effective enforcement of environmental laws and greater regulation of air and water pollution from CAFOs. EIP aims to reduce air and water pollution from CAFOs and empower affected communities by holding federal agencies, as well as individual corporations, accountable for failing to enforce or comply with environmental laws.

Farm Forward was founded in 2007 as the nation's first nonprofit devoted exclusively to end factory farming and our work improves the lives of 400,000,000 farmed animals annually.

Farm Forward implements innovative strategies to promote conscientious food choices, reduce farmed animal suffering, and advance sustainable agriculture.

Food & Water Watch is a national, nonprofit membership organization that mobilizes regular people to build political power to move bold and uncompromised solutions to the most pressing food, water, and climate problems of our time. Food & Water Watch uses grassroots organizing, media outreach, public education, research, policy analysis, and litigation to protect people's health, communities, and democracy from the growing destructive power of the most powerful economic interests. Food & Water Watch has worked to address pollution from CAFOs since its founding, and advocates for a ban on these facilities due to their harmful impacts on the environment, rural communities and family farmers, public health, workers, and animal welfare.

Friends of Family Farmers is a statewide grassroots nonprofit organization with more than 8,000 supporters across Oregon. Friends of Family Farmers brings together independent small to mid-size farmers, food advocates, and concerned citizens to shape and support socially and ecologically responsible, family-scale agriculture in Oregon that respects the land, treats animals humanely, and sustains local communities.

Friends of the Earth, founded by David Brower in 1969, fights to create a healthy and just world. Our Climate-Friendly Food Program aims to reduce the harmful impacts of industrial animal agriculture and build a more just and resilient food system through policy change and by reducing institutional purchases of industrial meat and dairy while driving increased demand for plant-based foods and organic, high welfare, and pasture-raised animal products.

Government Accountability Project is a national nonprofit whose mission is to promote corporate and government accountability by protecting whistleblowers, advancing occupational free speech, and empowering citizen activists. Founded in 1977, Government Accountability Project is the nation's leading whistleblower protection and advocacy organization. In addition to focusing on whistleblower support in several program areas, including food and agriculture through its Food Integrity Campaign, Government Accountability Project leads campaigns to enact whistleblower protection laws both domestically and internationally.

Great Lakes Environmental Law Center is a Michigan-based environmental law nonprofit that fights for environmental justice, and works with Michigan residents to develop and implement effective legal and policy strategies to address the environmental issues that are impacting their health and quality of life.

GreenLatinos is a national nonprofit organization that convenes a broad coalition of Latino leaders committed to addressing national, regional and local environmental, natural resources and conservation issues that significantly affect the health and welfare of the Latino community in the United States. GreenLatinos develops and advocates for policies and programs to advance this mission. An overwhelming majority of Latinos (78%) say they have personally experienced the effects of climate change. GreenLatinos members are calling for federal climate action that achieves deep carbon cuts, funds resilient infrastructure, and prioritizes benefits for the most impacted communities.

Idaho Organization of Resource Councils is an environmental justice nonprofit that empowers its members to improve the well-being of their communities, sustain family farms and ranches, transform local food systems, promote clean energy, and advocate for responsible stewardship of Idaho's natural resources.

Institute of Agriculture and Trade Policy (IATP) is a nonprofit that works locally and globally at the intersection of policy and practice to ensure fair and sustainable food, farm, and trade systems. IATP's climate change work aims to reduce the harmful impacts of industrialized animal agriculture and promote regenerative systems based on agroecology principles.

Iowa Citizens for Community Improvement (Iowa CCI) is a statewide, grassroots people's action group that uses community organizing to win public policy that puts communities before corporations and people before profits, politics and polluters. Iowa CCI members are everyday Iowans fighting for a better food and farm system, one that works for farmers, workers, eaters, and the environment. Iowa CCI has been fighting to put people first for over 45 years.

Johns Hopkins Center for a Livable Future is based at the Johns Hopkins Bloomberg School of Public Health. We are an academic based education, research and practice Center focusing our work at the intersection of food production, public health, and the environment. We have a particular focus on the public health, environmental and rural community impacts of large scale animal production systems, commonly referred to as concentrated animal feeding operations.

Land Stewardship Project (LSP) is a private, nonprofit organization founded in 1982 to foster an ethic of stewardship for farmland, to promote sustainable agriculture and to develop sustainable communities. LSP is dedicated to creating transformational change in our food and farming system. LSP's work has a broad and deep impact, from new farmer training and local organizing, to federal policy and community based food systems development. At the core of all our work are the values of stewardship, justice and democracy.

Leadership Counsel for Justice & Accountability works alongside impacted communities in the San Joaquin and Eastern Coachella Valleys to eradicate injustice and secure equal access to opportunity regardless of wealth, race, income, or place. Leadership Counsel advocates at the local, regional, and statewide levels on the overlapping issues of land use, transportation, climate change, safe and affordable drinking water, housing, environmental justice, equitable investment, and government accountability.

Missouri Rural Crisis Center is a statewide farm and rural membership organization founded in 1985 with over 5,600 member families. The Missouri Rural Crisis Center's mission is to preserve family farms, promote stewardship of the land, environmental integrity, and strive for economic and social justice by building unity and mutual understanding among diverse groups, both rural and urban.

North Carolina Environmental Justice Network promotes health and environmental equality for all people of North Carolina through community action for clean industry, safe workplaces and fair access to all human and natural resources. NCEJN seeks to accomplish these goals through organizing, advocacy, research, and education based on principles of economic

equity and democracy for all people. NCEJN is a network of twenty eight organizations committed to the principles of environmental justice.

Northeast Organic Farming Association, Massachusetts Chapter is a member-based nonprofit that represents over 1,000 sustainable farmers, gardeners, and organic consumers across the state. NOFA/Mass is primarily an educational organization committed to deep organic and agroecological practices, social justice, and healthy communities. Since 1982 NOFA/Mass has been working to expand the production and availability of nutritious food from living soil for the health of individuals, communities and the planet.

Organic Consumers Association is an online and grassroots 501(c)(3) nonprofit public interest organization, and the only organization in the U.S. focused exclusively on promoting the views and interests of the increasingly vocal majority of Americans who prefer organic food and farming – for their health and the health of the planet.

Public Justice Foundation is a national nonprofit legal advocacy organization committed to fighting injustice, protecting Earth’s sustainability, and challenging corporate wrongdoing. The Public Justice Food Project specifically aims to dismantle harmful industrial agricultural practices and promote a just, humane, and regenerative animal agriculture system.

Sierra Club is a national nonprofit organization with 65 chapters and over 800,000 members dedicated to exploring, enjoying, and protecting the wild places of the earth; to practicing and promoting the responsible use of the earth’s ecosystems and resources; to educating and enlisting humanity to protect and restore the quality of the natural and human environment; and to using all lawful means to carry out these objectives. The Sierra Club is committed to reducing emissions of all harmful pollutants, including industrial greenhouse gases, and has invested significant resources into combatting emissions of methane, a powerful greenhouse gas that is responsible for approximately one-quarter of the warming our planet has experienced since pre-industrial times.

Socially Responsible Agricultural Project (SRAP) informs and educates the general public about the negative effects of concentrated animal feeding operations – also known as factory farms – while working directly with U.S. communities impacted by this destructive form of industrial animal agriculture. Through public education, issue advocacy, and local community organizing, SRAP empowers rural residents to protect their public health, environmental quality, natural resources and local economies from the damaging impacts of factory farms.

III. STATUTORY BACKGROUND

A. EPA has expansive authority to list industrial dairy and hog operations under section 111 of the Clean Air Act.

Congress enacted the Clean Air Act “to protect and enhance the quality of the Nation’s air resources so as to promote the public health and welfare.”² To this end, the Act outlines a

² 42 U.S.C. § 7401(b)(1).

process for identifying stationary sources of dangerous air pollution, and limiting emissions from those sources. The EPA is the federal agency responsible for administering the Act.

Section 111 of the Clean Air Act requires EPA to publish and regularly revise a “list of categories of stationary sources.”³ Specifically, EPA must list any source category that the Administrator finds, in their judgment, “causes, or contributes significantly to, air pollution which may reasonably be anticipated to endanger public health or welfare.”⁴ EPA commonly refers to this determination as the “endangerment finding.”

1. New Source Performance Standards

Within one year of adding a new source category to this list, EPA must then promulgate “standards of performance” to reduce air pollution from new and modified sources in that category.⁵ EPA may also “distinguish among classes, types, and sizes within categories of new sources for the purpose of establishing such standards.”⁶

These standards must “reflect[] the degree of emission limitation achievable through the application of the best system of emission reduction which (taking into consideration the cost of achieving such reduction and any nonair quality health and environmental impact and energy requirements) the Administrator determines has been adequately demonstrated.”⁷ EPA cannot, however, “require any new or modified source to install and operate any particular technological system of continuous emission reduction to comply with any new source standard of performance” unless the Administrator finds, in their judgment, “it is not feasible to prescribe or enforce a standard of performance.”⁸

EPA has promulgated standards of performance for pollutants from new and modified facilities in dozens of industries,⁹ including non-methane organic compound emissions from

³ *Id.* § 7411(b)(1)(A).

⁴ *Id.*

⁵ *Id.* § 7411(b)(1)(B).

⁶ *Id.* § 7411(b)(2).

⁷ *Id.* § 7411(a)(1).

⁸ *Id.* § 7411(b)(5). If the Administrator finds, in their judgment, “it is not feasible to prescribe or enforce a standard of performance,” they “may instead promulgate a design, equipment, work practice, or operational standard, or combination thereof, which reflects the best technological system of continuous emission reduction,” taking into account the cost, non-air quality health and environmental impact, and energy requirements. *Id.* § 7411(h)(1).

⁹ EPA, *New Source Performance Standards*, <https://www.epa.gov/stationary-sources-air-pollution/new-source-performance-standards> (last updated Jul. 9, 2020); 40 C.F.R. § 60.16 (prioritized major source categories).

municipal solid waste landfills;¹⁰ particulate matter from grain elevators;¹¹ particulate matter from glass manufacturing plants;¹² particulate matter, nitrogen oxide, and sulfur dioxide from portland cement plants;¹³ and volatile organic compounds from rubber tire manufacturing plants, to name a few.¹⁴ In 2015, EPA promulgated standards of performance to limit GHG emissions “manifested as CO₂” from fossil fuel-fired electric utility steam generating units and stationary combustion turbines,¹⁵ which were among the first sources regulated under section 111(b).¹⁶

2. Emission Guidelines for Existing Sources

Upon or after setting standards for new and modified sources, EPA must establish guidelines for existing sources, and states must follow these guidelines to develop standards of performance for existing sources located in their borders.¹⁷ This requirement does not apply to emissions of air pollutants regulated as either (1) a criteria air pollutant listed under section 7408(a); or (2) a hazardous air pollutant emitted from a source category regulated under section 7412.¹⁸ Thus, section 111(d) is a gap-filling provision designed to regulate pollutants from existing sources that are not covered by the criteria pollutant provisions or the hazardous air pollutant provisions.

Currently, EPA has listed six criteria air pollutants under section 7408(a): carbon monoxide (CO), lead (Pb), nitrogen dioxide (NO₂), sulfur dioxide (SO₂), ozone (O₃), and

¹⁰ 40 C.F.R. § 60.752; *see also* Standards of Performance for Municipal Solid Waste Landfills, 61 Fed. Reg. 9905 (Mar. 12, 1996) (adding “municipal solid waste landfills” to the priority list of source categories under section 111 and promulgating NSPS for landfill gas emissions); EPA, EPA-453/R-94-021, Background Information Document, 1-2 and 1-3 (Dec. 1995) (explaining that methane and other organic compounds from landfills endanger public health and welfare by contributing to ozone formation, cancer and non-cancer health effects, and odor nuisance).

¹¹ 40 C.F.R. § 60.302; *see also* Standards of Performance for Grain Elevators, 43 Fed. Reg. 34340 (Aug. 3, 1978) (promulgating NSPS for particulate matter emissions from grain elevators because senate committee “listed grain elevators as a source for which standards of performance should be developed” in September 1970).

¹² 40 C.F.R. § 60.292; *see also* EPA, EPA-450/3-79-005b, Background Information Document, 2-11 (Sep. 1980) (noting that the Administrator found that particulate matter emissions from new glass manufacturing plants contribute significantly to air pollution, “even though the total amount of emissions is a small portion of the Nation’s total particulate emissions”); 44 Fed. Reg. 34193 (Jun. 14, 1979) (adding glass manufacturing to list of source categories that endanger public health and welfare under section 111).

¹³ 40 C.F.R. § 60.62.

¹⁴ *Id.* § 60.542; *see also* Standards of Performance for Rubber Tire Industry, 54 Fed. Reg. 38634 (Sep. 19, 1989) (promulgating revised NSPS for VOC emissions from rubber tire manufacturing operations in response to petition); 44 Fed. Reg. 49222 (Aug. 21, 1979) (adding synthetic rubber tire industry to priority list under section 111).

¹⁵ 40 C.F.R. Part 60, Subpart TTTT; *see also* Standards of Performance for GHG Emissions from Electric Utility Generating Units (EGUs), 80 Fed. Reg. 64510 (Oct. 23, 2015).

¹⁶ *See* List of Categories of Stationary Sources, 36 Fed. Reg. 5931 (Mar. 31, 1971); Priority List & Additions to the List of Categories of Stationary Source, 44 Fed. Reg. 49222 (Aug. 21, 1979); *see also* Standards of Performance for New Stationary Sources, 36 Fed. Reg. 24876 (Dec. 23, 1971) (promulgating standards for steam generators, portland cement plants, incinerators, nitric acid plants, and sulfuric acid plants).

¹⁷ 42 U.S.C. § 7411(d)(1).

¹⁸ *Id.* § 7411(d)(1).

particulate matter (PM).¹⁹ The “primary criteria pollutants of concern for agriculture” are particulate matter and ozone.²⁰ Although industrial animal operations do not directly emit ozone, they emit nitrogen oxides (NOx) and volatile organic compounds (VOCs), which are precursors to ozone formation. Industrial animal operations emit particulate matter as dust. These operations also indirectly emit particulate matter precursors including ammonia, NOx, VOCs, and sulfur dioxide.²¹ So while some CAFO emissions are criteria pollutants, methane is not one of them. EPA has also failed to list industrial animal operations as a source category of hazardous air pollutants, even though they emit several hazardous air pollutants listed by EPA.²² Thus, the gap-filling provisions of section 111(d) would apply with respect to methane, which is not regulated as either a criteria pollutant or a hazardous air pollutant from CAFOs.

EPA has promulgated guidelines under section 111(d) to reduce emissions from existing facilities in the following source categories:

- GHG emissions (in the form of CO₂) from fossil fuel-fired electric utility generating units.²³
- Non-methane organic compound emissions from municipal solid waste landfills.²⁴
- Particulate matter, nitrogen oxides, sulfur dioxides, and other air pollutants from solid waste combustors.²⁵ Please note that section 129 of the Act requires EPA to issue

¹⁹ 40 C.F.R. Part 50; EPA, *NAAQS Table*, <https://www.epa.gov/criteria-air-pollutants/naaqs-table> (Dec. 20, 2016); *see also* Review of the Ozone NAAQS, 85 Fed. Reg. 49,830 (Aug. 14, 2020) (proposed rule) (proposing to retain primary and secondary air quality standards for ozone); Review of the Particulate Matter NAAQS, 85 Fed. Reg. 24,094 (Apr. 30, 2020) (proposed rule) (proposing to retain primary and secondary air quality standards for particulate matter, despite new evidence of health and welfare effects).

²⁰ *See* NRCS, USDA, CRITERIA POLLUTANTS (2011).

²¹ *See, e.g.*, PM_{2.5} SIP Requirements Rule, 81 Fed. Reg. 58010 (Aug. 24, 2016) (requiring that states evaluate all PM_{2.5} precursor pollutants (sulfur dioxide, oxides of nitrogen, VOC, and ammonia) in the development of all PM_{2.5} nonattainment area state implementation plans); *see also id.* at 58104 (“The principal precursor gases that contribute to secondary PM_{2.5} formation are . . . ammonia, from sources such as animal feeding operations, wastewater treatment and fertilizer.”); P. GREEN & F. MITLOEHNER, EPA, MECHANISMS OF NITROGEN OXIDE FORMATION DURING ENSILING (2014) (long-term feed storage (or silage) at industrial dairy operations emits NOx and VOCs, which are precursors to ozone formation and PM_{2.5}).

²² 40 C.F.R. Parts 60-63; *see also id.* § 61.01 (list of hazardous air pollutants); EPA, *National Emission Standards for Hazardous Air Pollutants*, <https://www.epa.gov/stationary-sources-air-pollution/national-emission-standards-hazardous-air-pollutants-neshap-9> (Jun. 5, 2020); *Initial List of Hazardous Air Pollutants with Modifications*, <https://www.epa.gov/haps/initial-list-hazardous-air-pollutants-modifications> (Jun. 18, 2020).

²³ 40 C.F.R. Part 60, Subpart UUUUa; *see also* Emission Guidelines for GHG Emissions from Existing EGUs, 84 Fed. Reg. 32520 (Jul. 8, 2019) (promulgating revised emission guidelines for CO₂ emissions from two subcategories of existing coal-fired EGUs based on measures that can be applied to a designated facility); Carbon Pollution Emission Guidelines for Existing EGUs, 80 Fed. Reg. 64661 (Oct. 23, 2015) (promulgating emission guidelines for CO₂ emissions based on previous best system).

²⁴ 40 C.F.R. § 60.33c; Emission Guidelines for Existing Municipal Solid Waste Landfills, 81 Fed. Reg. 59276 (Aug. 29, 2016). In 2003, the EPA promulgated national emission standards for hazardous air pollutants from municipal solid waste landfills under section 112. The HAP emitted by landfills include vinyl chloride, ethyl benzene, toluene, and benzene. *See* 40 C.F.R. Part 63, Subpart AAAA; 68 Fed. Reg. 2227 (Jan. 16, 2003).

²⁵ 40 C.F.R. Part 60, Subpart Cb; Emission Guidelines for Existing Large Municipal Waste Combustors, 71 Fed. Reg. 27323 (May 10, 2006); *see also* 40 C.F.R. Part 60, Subparts BBBB (small municipal waste combustion units), DDDD (industrial solid waste incineration units), EEEE and FFFF (other solid waste incineration units).

emission guidelines for air pollution from existing solid waste incinerators under section 111(d).²⁶

- Acid mist from sulfuric acid production plants.²⁷
- Fluoride emissions from phosphate fertilizer plants.²⁸
- Total reduced sulfur emissions from Kraft pulp plants.²⁹
- Fluoride emissions from primary aluminum plants.³⁰

B. Although EPA has regulated other sources of GHG emissions under section 111, EPA took final action and declined to determine whether to list concentrated animal feeding operations.

1. EPA's Rulemakings on GHG Emissions

In 2009, EPA determined that six greenhouse gases—carbon dioxide (CO₂), methane (CH₄), nitrous oxide (N₂O), hydrofluorocarbons (HFCs), perfluorocarbons (PFCs), and sulfur hexafluoride (SF₆)—endanger the public health and public welfare of current and future generations by causing and contributing to climate change.³¹ Subsequently, EPA relied on this finding to establish standards to reduce GHG emissions in the form of CO₂ from new and existing fossil fuel-fired electric utility steam generating units and combustion turbines under section 111 of the Clean Air Act.³² Further, in addition to establishing VOC standards for new sources within the oil and gas industry under section 111,³³ which have the co-benefit of reducing methane emissions, EPA issued GHG standards in the form of methane emission

²⁶ Although section 111(d) generally prohibits EPA from issuing emission guidelines for pollutants regulated as criteria pollutants under section 110 or hazardous air pollutants under section 112, section 129 directs the agency to issue existing source emission guidelines for specified pollutants, including a number of criteria and hazardous air pollutants, from solid waste incinerators. 42 U.S.C. § 7429(b).

²⁷ 40 C.F.R. Part 60, Subpart Cd; Emission Guideline for Sulfuric Acid Mist, 42 Fed. Reg. 55796 (Oct. 18, 1977).

²⁸ 42 Fed. Reg. 12022 (Mar. 1, 1977) (notifying public of availability of final guideline document: EPA-450/2-77-005, Guidelines for Control of Fluoride Emissions from Existing Phosphate Fertilizer Plants (Mar. 1977)).

²⁹ 44 Fed. Reg. 29828 (May 22, 1979) (notifying public of availability of final guideline document: EPA-450/2-78-003b, Guidelines for Control of Emissions from Existing Mills (Mar. 1979)).

³⁰ 45 Fed. Reg. 26294 (Apr. 17, 1980) (notifying public of availability of final guideline document: EPA-450/2-78-049b, Guidelines for Control of Fluoride Emissions from Existing Primary Aluminum Plants (Dec. 1979)).

³¹ Endangerment & Cause or Contribute Findings from GHGs under Section 202(a) of the Clean Air Act, 74 Fed. Reg. 66496 (Dec. 15, 2009) (final rule) (finding that combined GHG emissions from new motor vehicles and new motor vehicle engines contribute to GHG pollution that endangers both public health and welfare); *see also* Finding that GHG Emissions from Aircraft Cause or Contribute to Air Pollution That May Reasonably Be Anticipated to Endanger Public Health & Welfare, 81 Fed. Reg. 54422 (Aug. 15, 2016) (finding that GHG emissions from aircraft engines satisfy endangerment standard under section 231(a)(2)(A) of the Clean Air Act).

³² Standards of Performance for GHG Emissions from New EGUs, 80 Fed. Reg. 64510, 64530-31 (Oct. 23, 2015) (final rule) (regulating CO₂ emissions from new EGUs under section 111); Review of Standards of Performance for New EGUs, 83 Fed. Reg. 65424, 65435 (Dec. 20, 2018) (proposed rule) (proposing to promulgate new emission standards for CO₂ emissions from new EGUs under section 111); Emission Guidelines for GHG Emissions from Existing EGUs, 80 Fed. Reg. 32520 (Sep. 6, 2019) (final rule) (promulgating emission guidelines for GHG emissions from existing EGUs based on revised determination of best system of emission reduction).

³³ Review of Standards of Performance for Oil & Gas Sector, 77 Fed. Reg. 49490, 49513 (Aug. 16, 2012) (“[T]he control measures that the EPA is requiring for VOC result in substantial methane reductions as a co-benefit.”).

limits.³⁴ Although EPA has taken action to rescind the GHG standards for oil and gas operations, it has not disputed its earlier finding that GHG emissions—including methane—endanger public health and welfare,³⁵ and the incoming Biden administration has affirmed its intention to reinstitute those standards and to issue existing source guidelines for oil and gas methane emissions.

2. EPA’s Final Action Declining to Determine the Petition to Regulate GHG Emissions from CAFOs

In September 2009, several public interest organizations recognized that industrial animal production is a major source of criteria air pollutants and GHG emissions and petitioned EPA to regulate these emissions. Specifically, the petition urged EPA to list concentrated animal feeding operations (CAFOs) as a category of sources that emit GHGs and other air pollutants that cause or contribute significantly to air pollution that endangers public health and welfare under section 111 of the Clean Air Act.³⁶

In December 2017, in its final response to the petition, EPA “declined to determine whether to list CAFOs as a source category under . . . section 111.”³⁷ Although information at the time indicated that methane emissions from industrial dairy and hog operations were significant,³⁸ EPA noted that it needed more time to “gather[] additional information” before “determining which regulatory tool[s] would be most appropriate to regulate CAFO emissions to protect public health and welfare.”³⁹ EPA further claimed that it could not determine whether any regulatory action was needed until the agency finished “[d]eveloping accurate methodologies to estimate air emissions from CAFOs,” based on data collected during the National Air Emissions Monitoring Study (NAEMS).⁴⁰

However, as explained further below, these justifications do not explain EPA’s failure to list CAFOs as a source category causing or contributing significantly to dangerous air emissions. The NAEMS study focused on a short list of pollutants, which did not include methane, so NAEMS simply has no bearing on methane emissions from CAFOs. Moreover, effective methodologies for estimating methane emissions already exist and are being used by the

³⁴ Standards of Performance for Oil & Natural Gas Sector, 81 Fed. Reg. 35824, 35841 (Jun. 3, 2016) (final rule) (“While the controls used to meet the VOC standards in the 2012 NSPS also reduce methane emissions incidentally, in light of the current and projected future GHG emissions from the oil and natural gas industry, reducing GHG emissions from this source category should not be treated simply as an incidental benefit to VOC reduction; rather, it is something that should be directly addressed through GHG standards in the form of limits on methane emissions under CAA section 111(b) . . .”).

³⁵ Review of Emission Standards for New, Reconstructed, and Modified Sources in Oil & Natural Gas Sector, 85 Fed. Reg. 57018 (Sep. 14, 2020) (final rule).

³⁶ Petition to List CAFOs & Promulgate Standards of Performance under Section 111 of the Clean Air Act (Sep. 21, 2009).

³⁷ Letter from E. Scott Pruitt, Administrator, EPA, to Tom Frantz, President, Ass’n of Irrigated Residents, at 1–2 (Dec. 15, 2017).

³⁸ See *Petition to List CAFOs*, *supra* note 36, at 17–19, 28–30.

³⁹ Letter from E. Scott Pruitt, *supra* note 37, at 1–2.

⁴⁰ *Id.* at 4–7.

Agency.⁴¹ EPA has not initiated any rulemaking to reduce these emissions. Accordingly, EPA should list industrial dairy and hog operations as source categories of dangerous methane emissions and subsequently adopt emission reduction standards for methane emissions.

IV. FACTUAL BACKGROUND

A. Climate Change

Over the last several decades, atmospheric concentrations of anthropogenic greenhouse gases (GHGs), such as carbon dioxide, methane, and nitrous oxide, have reached unprecedented levels. Due largely to population growth and industrial processes, this increase in anthropogenic GHG emissions has had widespread climate impacts, from warming temperatures to rising sea levels. However, despite widespread consensus that anthropogenic emissions are the “dominant cause” of climate change, current efforts to reduce emissions from industrial activities have not stabilized current GHG concentrations.⁴² Thus, without additional reduction efforts, GHG emissions will continue to rise, resulting in irreversible damage to natural and human systems.⁴³

1. Public Health

Climate change is a significant threat to human life and safety. Recent scientific assessments confirm that extreme temperature variation and heat waves are likely to increase deaths and illnesses, especially among society’s most vulnerable populations, such as children, pregnant women, elderly people, and people with chronic illness.⁴⁴ Climate change is also associated with more intense and frequent extreme weather events (e.g., hurricanes, wildfires, tornadoes), which can have numerous detrimental public health impacts, including increased deaths, injuries, infections, and stress-related disorders. Relatedly, climate change is likely to increase exposure to harmful pathogens and toxins in water and food resources, and accelerate the spread of deadly infectious diseases, such as the West Nile and Zika viruses.⁴⁵ Moreover, the health impacts of climate change disproportionately affect low-income communities and communities of color due to their increased exposure and sensitivity to health hazards.⁴⁶

2. Public Welfare

Climate change will also adversely affect public welfare in several ways. For example, rising temperatures will increase extreme weather events, such as droughts, floods, and wildfires. Coastal communities are also particularly vulnerable to property damage and degradation from rising sea levels and more intense hurricanes and storm events. Likewise, the agricultural sector

⁴¹ See *infra* Part V.B.1.

⁴² INTERGOVERNMENTAL PANEL ON CLIMATE CHANGE, FIFTH ASSESSMENT REPORT, SYNTHESIS REPORT 4 (2014) [hereinafter IPCC, AR5 REPORT]; see also SPECIAL REPORT ON CLIMATE CHANGE & LAND (2019).

⁴³ IPCC, AR5 REPORT, *supra* note 42, at 17–20.

⁴⁴ See *infra* Part V.A.2.ii.a (discussing public health impacts of climate change).

⁴⁵ U.S. GLOBAL CHANGE RESEARCH PROGRAM, FOURTH NAT’L CLIMATE ASSESSMENT, VOL. II: IMPACTS, RISKS, & ADAPTATION 544–46 (2018) [hereinafter USGCRP, NCA4 REPORT].

⁴⁶ *Id.* at 546–48.

is uniquely vulnerable to climate change because extreme weather events, such as heavy precipitation and heat waves, threaten crop and livestock production.⁴⁷ Further, climate change will disrupt access to critical sectors and infrastructure, including transportation, energy, communication, and medical systems.

B. Expansion of Industrial Dairy and Hog Operations

Over the past few decades, corporate consolidation has forced U.S. hog and dairy production to shift from traditional, independent pasture-based operations to highly concentrated and industrialized operations, which rely on the industrial model of production to maximize the number of animals. Unlike pasture-based operations, where animals can graze and forage on pasture, industrial hog and dairy operations confine animals in large, specialized facilities for every stage of production. Further, industrial operations use liquefied manure management systems, such as lagoons (flush systems) or slurry/liquid tanks (scrape systems), to collect and store massive amounts of manure from production facilities until disposal on nearby agricultural fields.⁴⁸ Typically, industrial operations use mechanical spread and injection systems to apply manure to soils, and irrigation systems to apply liquid manure solutions and wastewater to crops and grazing lands.⁴⁹ Thus, industrial hog and dairy operations stock more animals per acre than traditional pasture-based operations because they rely on confined production facilities and liquefied manure management systems.

Both confinement facilities and liquefied manure storage systems emit significant amounts of ammonia, hydrogen sulfide, particulate matter, and other odorous and harmful air pollutants, which degrade local and regional air quality. These sources also emit methane, nitrous oxide, and carbon dioxide, which contribute to rising GHG emissions and climate change impacts. In fact, EPA has expressly acknowledged that the expansion of dairy cows and hogs in confinement facilities with liquefied manure management systems has caused methane emissions from this sector to increase significantly in recent decades.⁵⁰ In the most recent inventory of U.S. GHG emissions, EPA noted that the “manure management systems with the most substantial methane emissions are those associated with confined animal management operations[,] where

⁴⁷ See IPCC, CLIMATE CHANGE & LAND, *supra* note 42, at 5-24 to 5-37.

⁴⁸ Manure lagoons “are large earthen containment structures into which manure and wastewater is flushed and maintained in liquid form until removed,” and pits or tanks “are often located under hog production facilities where, in the typical system, manure drops into pits through slatted floors and is stored in a slurry form until removed.” Both systems of liquefied manure storage “hold the manure until it can be land-applied on the same farm or nearby farms.” ECON. RESEARCH SERV. (ERS), USDA, AGRIC. RESOURCES & ENVTL. INDICATORS 75 (2019).

⁴⁹ *Id.* (“Technologies for land application include liquid/slurry manure spreaders that may or may not incorporate manure into the soil, and irrigation systems that spray or spread the liquid manure solution on nearby fields.”); see also WISCONSIN MANURE IRRIGATION WORKGROUP, CONSIDERATIONS FOR THE USE OF MANURE IRRIGATION PRACTICES 13, 16–17 (K. Genskow & R. Larson, eds., 2016) [hereinafter MANURE IRRIGATION REPORT].

⁵⁰ EPA, INVENTORY OF U.S. GREENHOUSE GAS EMISSIONS & SINKS: 1990-2018, at 5-12 (2020) (explaining that “the shift toward larger dairy cattle and swine facilities since 1990 has translated into an increasing use of liquid manure management systems, which have higher potential CH₄ emissions than dry systems”) [hereinafter U.S. GHG INVENTORY]; see also *id.* at 5-11 (noting that the “majority of [the 66 percent increase in methane emissions from 1990 to 2018] is due to swine and dairy cow manure . . . [and] an increase in animal populations”).

manure is handled in liquid-based systems.”⁵¹ Consequently, as animal production becomes increasingly more industrialized and concentrated, methane emissions will also increase, leading to adverse climate change impacts.

1. Industrial Dairy

According to the U.S. Department of Agriculture (USDA), “the structure of dairy farming has changed dramatically in the last [three] decades,” with production shifting away from small, pasture-based farms to larger and more industrialized operations.⁵² In fact, over 60 percent of U.S. dairy production takes place on industrialized operations with more than 500 cows, and “[s]everal farms now have milking herds of well over 10,000 [cows.]”⁵³ As USDA explained, industrial dairy operations rely on animal confinement, purchased feed, liquefied manure management, and other highly polluting “practices and technologies” to maximize profits.⁵⁴

As the number of U.S. dairy farms has decreased, farmer-owned dairy cooperatives have also decreased. These cooperatives provide a wide-range of beneficial services to member farmers, including price negotiations, milk processing, and marketing. However, as cooperatives consolidate and their membership grows more diverse, it becomes increasingly difficult for cooperatives to adequately represent member farmers with different needs, causing “farmers [to] feel they have lost control of their cooperative’s priorities and strategic direction.”⁵⁵

The decline in dairy farms and cooperatives has coincided with increased consolidation in ownership on a national scale, including mergers between the nation’s largest dairy cooperatives and milk processors.⁵⁶ According to recent studies, the expansion of “cooperatives’ investments in dairy processing can affect farmers’ earnings” and “create power imbalances.”⁵⁷ Moreover, major grocery retailers, such as Walmart, have started to build their own dairy processing plants to cut costs, forcing dairy farmers to find new buyers and lower their prices.⁵⁸

⁵¹ *Id.* at 5-11; *see also id.* at 5-12 tbl.5-7 (demonstrating that methane emissions from dairy cattle and swine have increased by 120 percent and 46 percent, respectively, since 1990).

⁵² J. MACDONALD, ET AL., USDA, ECON. RES. REP. 205, CHANGING STRUCTURE, FINANCIAL RISKS, & GOV’T POLICY FOR THE U.S. DAIRY INDUSTRY 7-13, 18 (2016) [hereinafter USDA, U.S. DAIRY REPORT].

⁵³ *Id.* at 11; USDA, 2017 CENSUS OF AGRICULTURE: UNITED STATES, 23 tbl.17 (2019).

⁵⁴ USDA, U.S. DAIRY REPORT, *supra* note 52, at 13-14, 16.

⁵⁵ GAO, DAIRY COOPERATIVES: POTENTIAL IMPLICATIONS OF CONSOLIDATION & INVESTMENTS IN DAIRY PROCESSING FOR FARMERS 5 (2019).

⁵⁶ *See, e.g.*, Press Release: Dean Foods Completes Sale of Assets to Dairy Farmers of America (May 1, 2020) (announcing merger between DFA, largest dairy cooperative in the country, with Dean Foods, largest milk processor in the country).

⁵⁷ GAO, DAIRY CONSOLIDATION, *supra* note 55, at 4.

⁵⁸ *See, e.g.*, J. Bunge & J. Kang, *Walmart, Kroger Bottle Their Own Milk & Shake Up American Dairy Industry*, WALL STREET J. (Jul. 27, 2020), <https://www.wsj.com/articles/walmart-kroger-bottle-their-own-milk-and-shake-up-american-dairy-industry-11595872190>.

The increased consolidation of the U.S. dairy industry has put significant financial stress on farmers, most notably independent pasture-based farms. The expansion of industrial dairy operations has increased dairy production,⁵⁹ which has caused milk prices and net returns to decline.⁶⁰ In doing so, industrial dairies have put “increased financial pressure” on smaller dairies with higher production costs or tighter margins.⁶¹ Across the country, independent farms are struggling to operate with little to no farm income, often wiping out their savings and credit to stay in business.⁶² In fact, many independent farms have been forced to close, thereby “continuing the process of structural change” due to increased consolidation and corporate control in the U.S. dairy industry.⁶³

Further, industrial dairy operations have several adverse impacts on local communities because they confine large numbers of cows in specialized production facilities, and generate massive amount of manure, odor, dust, and harmful air pollutants in local communities. These emissions degrade local air quality and threaten the health and well-being of local residents.⁶⁴ In addition, industrial dairies significantly increase local air pollution and odor because they rely heavily on liquefied manure management systems, most notably lagoons for storing manure. When operations eventually dispose of liquefied manure or wastewater onto nearby agricultural fields, nutrients, pathogens, antibiotic residues, and other harmful pollutants in the manure can

⁵⁹ J. MACDONALD, ET AL., USDA, ECON. RES. REP. 274, CONSOLIDATION IN U.S. DAIRY FARMING 2 fig.1; 6 fig.3 (2020); *see also* USDA, MILK PRODUCTION 7 (Feb. 20, 2020) (U.S. Milk Production from 2010 to 2019).

⁶⁰ *See* USDA, CONSOLIDATION IN U.S. DAIRY, *supra* note 59, at 5 fig.2 (demonstrating declining net returns and fluctuating milk prices in recent years); U.S. DAIRY REPORT, *supra* note 52, at 18 (“Increases in production reduce real (inflation-adjusted) product prices, and ultimately reduce farm milk prices.”).

⁶¹ USDA, U.S. DAIRY REPORT, *supra* note 52, at 18; *see also* CONSOLIDATION IN U.S. DAIRY, *supra* note 59, 19-25, 30; *see also* J. MacDonald & D. Newton, *Milk Production Continues to Shifting to Large-Scale Farms*, ERS (Dec. 1, 2014) (“Most of the largest dairy farms generate gross returns that exceed full costs, while most small and mid-size dairy farms do not earn enough to cover full costs.”), <https://www.ers.usda.gov/amber-waves/2014/december/milk-production-continues-shifting-to-large-scale-farms>.

⁶² *See, e.g.*, J. Fox, *A Productivity Revolution is Wiping Out (Most) Dairy Farms*, BLOOMBERG (Jun. 5, 2019), <https://www.bloomberg.com/opinion/articles/2019-06-05/dairy-farms-fall-victim-to-the-productivity-revolution>; *see, e.g.*, R. Barrett & L. Bergquist, *Industrial Dairy Farming is Taking Over in Wisconsin, Crowding Out Family Operations & Raising Environmental Concerns*, MILWAUKEE J. SENTINEL (updated Feb. 11, 2020), <https://www.jsonline.com/in-depth/news/special-reports/dairy-crisis/2019/12/06/industrial-dairy-impacts-wisconsin-environment-family-farms/4318671002>.

⁶³ USDA, U.S. DAIRY REPORT, *supra* note 52, at 18; USDA, CONSOLIDATION IN U.S. DAIRY, *supra* note 59, at 7-14; *see also* Hope Kirwan, *Wisconsin Loses 10 Percent of State’s Dairy Herds as Fallout from Low Milk Prices Continues*, WISCONSIN PUBLIC RADIO (Jan. 7, 2020), <https://www.wpr.org/wisconsin-loses-10-percent-states-dairy-herds-fallout-low-milk-prices-continues>.

⁶⁴ *See, e.g.*, S. Rasmussen, et al., *Proximity to Industrial Food Animal Production & Asthma Exacerbations in Pennsylvania*, 14 INT’L J. ENVTL. RES. & PUBLIC HEALTH 362 (2017); D. Williams, et al., *Cow Allergen (Bos D2) & Endotoxin Concentrations are Higher in the Settled Dust of Homes Proximate to Industrial-Scale Dairy Operations*, 26 J. EXPOSURE SCI. & ENVTL. EPIDEMIOLOGY 42 (2016); V. Blanes-Vidal, et al., *Residential Exposure to Outdoor Air Pollution From Livestock Operations & Perceived Annoyance Among Citizens*, 40 ENVTL. INT’L 44 (2012) (exposure to animal waste odor is “a significant degradation in [rural residents’] quality of life”); D. Williams, et al., *Airborne Cow Allergen, Ammonia & Particulate Matter at Homes Vary with Distance to Industrial Scale Dairy Operations: An Exposure Assessment*, 10 ENVTL. HEALTH. (2011) (industrial dairy operations increase community exposure to particulate matter, ammonia, and cow allergen).

spread to nearby properties and water sources,⁶⁵ threatening the health and well-being of local residents and livestock,⁶⁶ and contaminating crops.⁶⁷

2. Industrial Hog

Similarly, the expansion of the industrial model of production has significantly changed the structure of the U.S. hog industry.⁶⁸ According to USDA, hog farms were traditionally small, independently owned “farrow-to-finish operations that perform[ed] all phases of production,” from breeding to slaughtering.⁶⁹ Traditional hog farms also “typically fed their hogs crops grown onsite and then sold their hogs at local markets.”⁷⁰ Over the last three decades, however, corporate interests have forced U.S. hog production to shift away from “farrow-to-finish” operations to larger and more industrialized operations.⁷¹ In fact, 73 percent of U.S. hog production takes place on industrial operations with 5,000 or more hogs.⁷²

⁶⁵ See, e.g., EPA, TRANSPORT & FATE OF NUTRIENTS & INDICATOR MICROORGANISMS AT A DAIRY LAGOON WATER APPLICATION SITE: AN ASSESSMENT OF NUTRIENT MANAGEMENT PLANS (2012) (collecting studies demonstrating that land applications of manure and wastewater from industrial dairy lagoons contaminate water sources); EPA, CASE STUDIES ON THE IMPACT OF CAFOs ON GROUND WATER QUALITY 62 (2012) (over-application of dairy lagoon effluent resulted in groundwater contamination by nitrate, as well as antibiotics, estrogens, and other stressors); C. McKinney, et al., *Occurrence & Abundance of Antibiotic Resistance Genes in Agricultural Soil Receiving Dairy Manure*, 94 FEMS MICROBIOLOGY ECOLOGY 1 (2018) (manure applications significantly increase abundance of antibiotic resistant genes in soil); C. Givens, et al., *Detection of Hepatitis E Virus & Other Livestock-Related Pathogens in Iowa Streams*, 556 SCI. TOTAL ENVTL. 1042 (2016) (zoonotic pathogens were present in surface waters near manure application sites).

⁶⁶ See, e.g., T. Burch, et al., *Quantitative Microbial Risk Assessment for Spray Irrigation of Dairy Manure Based on an Empirical Fate & Transport Model*, 125 ENVTL. HEALTH PERSPECTIVES 1 (2017) (bioaerosols from spray irrigation of dairy manure increased the risk for acute gastrointestinal illness for nearby residents); M. Jahne, et al., *Emission & Dispersion of Bioaerosols From Dairy Manure Application Sites*, 49 ENVTL. SCI. TECH. 9842 (2015) (“[B]ioaerosols emitted from manure application sites following manure application may present significant public health risks to downwind receptors.”); R. Dungan, *Estimation of Infectious Risks in Residential Populations Exposed to Airborne Pathogens During Center Pivot Irrigation of Dairy Wastewaters*, 48 ENVTL. SCI. TECH. 5033 (2014) (bioaerosols from wastewater irrigation pose greatest infection risks to nearby residents); M. BORCHARDT & T. BURCH, AIRBORNE PATHOGENS FROM DAIRY MANURE AERIAL IRRIGATION & THE HUMAN HEALTH RISK (2016).

⁶⁷ See, e.g., M. Jahne, et al., *Bioaerosol Deposition to Food Crops Near Manure Application: Quantitative Microbial Risk Assessment*, 45 J. ENVTL. QUAL. 666 (2016) (pathogens from manure application sites can spread by air to nearby leafy greens).

⁶⁸ W. McBRIDE, ET AL., USDA, ECON. RES. REP. 158, U.S. HOG PRODUCTION FROM 1992 TO 2009: TECHNOLOGY, RESTRUCTURING, & PRODUCTIVITY GROWTH 1, 5 (2013) (explaining how “U.S. hog farm numbers dropped by 70 percent over 1991-2009 while hog inventories remained stable”) [hereinafter USDA, U.S. HOG REPORT]; see also USDA, CHANGES IN THE U.S. SWINE INDUSTRY: 1995-2012, at 7–9 (2017); USDA, 2017 CENSUS, *supra* note 53, at 24 tbl. 21.

⁶⁹ USDA, U.S. HOG REPORT, *supra* note 68, at 1.

⁷⁰ *Id.* at 5.

⁷¹ *Id.* at 1, 5.

⁷² USDA, 2017 CENSUS, *supra* note 53, at 24 tbl. 21; see also USDA, CHANGES IN THE U.S. SWINE INDUSTRY, *supra* note, at 12 tbl. A.2.c.

As the USDA explained, industrial hog producers are often producing hogs under contract for “large conglomerates or corporate organizations” known as integrators,⁷³ and these integrators put significant financial pressure on producers to externalize the true costs of industrial hog production. Therefore, confinement facilities and the expansion of the corporate-driven model of production have enabled hog integrators to maximize industrial hog production at the expense of local communities, the environment, and public health.

Industrial hog operations significantly degrade local, regional, and global air quality because they densely confine thousands of hogs in large and highly specialized facilities for each stage of production, and generate massive amounts of waste. These confinement facilities are a significant source of harmful air pollutants and odors, such as ammonia, hydrogen sulfide, and particulate matter, which adversely affect local communities.⁷⁴ Another significant source of air pollution is liquefied manure storage, which hold millions of gallons of manure and wastewater for long periods until operators can dispose of it onto nearby fields as fertilizer or irrigation water.⁷⁵ These systems generate significant amounts of methane, a potent greenhouse gas, and other harmful air pollutants. Unlike traditional farms, which sequester more carbon than they emit,⁷⁶ industrial hog operations do not offset GHG emissions because they rely on purchased feed from outside suppliers rather than crops grown on-site.⁷⁷

In addition, industrial hog operations threaten nearby properties and water sources by storing manure in long-term storage systems prone to breakage and spillage.⁷⁸ When there is an infrastructure failure or heavy rain storm, manure lagoons can spill decades’ worth of accumulated waste onto local properties, causing crop destruction, soil degradation, water

⁷³ USDA, U.S. HOG REPORT, *supra* note 68, at 4, 6, 11; *see also* USDA, 2017 CENSUS, *supra* note 53, at 24 tbl.23.

⁷⁴ *See, e.g.,* A. Schultz, et al., *Residential Proximity to CAFOs & Allergic & Respiratory Disease*, 130 ENVTL. INT’L 104911 (2019) (living near hog CAFO was associated with reduced lung function, allergies, and asthma); L. Schinas, et al., *Air Pollution, Lung Function, & Physical Symptoms in Communities Near Concentrated Swine Feeding Operations*, 22 EPIDEMIOLOGY 208 (2011) (air pollutants near hog CAFOs cause acute physical symptoms); B. Pavilonis, et al., *Relative Exposure to Swine Animal Feeding Operations & Childhood Asthma Prevalence in an Agricultural Cohort*, 122 ENVTL. RES. 74 (2013); D. Ferguson, et al., *Detection of Airborne Methicillin-Resistant Staphylococcus aureus Inside & Downwind of a Swine Building*, 21 J. AGROMEDICINE 149 (2016) (methicillin-resistant *S. aureus* (MRSA) was present in air downwind of hog CAFO); K. Kilburn, *Human Impairment From Living Near Hog CAFOs*, J. ENVTL. & PUBLIC HEALTH 1, 4–6 (2012) (residents near hog CAFOs have higher rates of neurobehavioral and pulmonary impairments).

⁷⁵ *See* ERS, TRENDS & DEVELOPMENTS IN HOG MANURE MANAGEMENT 11–18 (2011) (explaining industrial hog operations rely on liquefied manure management systems to “concentrat[e] more animals on a limited land base”).

⁷⁶ *See, e.g.,* W. Teague, et al., *The Role of Ruminants in Reducing Agriculture’s Carbon Footprint in North America*, 71 J. SOIL & WATER CONSERVATION 156 (2016) (“[R]uminants consuming only grazed forages under appropriate management result in more C sequestration than emissions.”).

⁷⁷ USDA, U.S. HOG REPORT, *supra* note 68, at 6, 8 (noting that “hog producers that specialized in individual production phases generally had much less acreage than farrow-to-finish farms”).

⁷⁸ *See, e.g.,* D. Schaffer-Smith, et al., *Repeated Hurricanes Reveal Risks & Opportunities for Social-Ecological Resilience to Flooding & Water Quality Problems*, 54 ENVTL. SCI. & TECH. 7194, 7199–20 (2020) (finding “91 swine CAFOs with 125 waste lagoons, which produce ~500 million gallons of liquid manure per year, as well as almost 6,700 km² of agricultural land where manure is likely regularly applied” “within the repeatedly flooded area”).

contamination, and other adverse impacts.⁷⁹ Manure spills can also spread disease among livestock,⁸⁰ and reduce crop yields, quality, and revenue on nearby farms.⁸¹ Moreover, disposing of liquefied manure and wastewater onto nearby agricultural fields can threaten crops, aquatic life, livestock, and human health by increasing manure nutrients and harmful pathogens in the environment.⁸² These risks disproportionately affect local farmers and residents.⁸³ In fact, several rural residents have successfully sued Smithfield, an industry giant, for spraying liquefied

⁷⁹ See, e.g., Press Release: NC Dep't of Env'tl. Quality, Division of Water Resources Issues Notice of Violation to B&L Farms (Jul. 16, 2020) (hog lagoon breach caused three million gallons of manure to spread "into farms, wetlands, and . . . tributary"), <https://deq.nc.gov/news/press-releases/2020/07/16/division-water-resources-issues-notice-violation-bl-farms>; *Eight Manure Lagoons Overflow in Western Iowa Because of Flooding*, SIOUX CITY J. (Mar. 26, 2019), https://siouxcityjournal.com/news/state-and-regional/iowa/eight-manure-lagoons-overflow-in-western-iowa-because-of-flooding/article_792b6561-c617-58ea-b287-70c58d3bb2bc.html; Wynne Davis, *Overflowing Hog Lagoons Raise Environmental Concerns in North Carolina*, NPR (Sep. 22, 2018), <https://www.npr.org/2018/09/22/650698240/hurricane-s-aftermath-floods-hog-lagoons-in-north-carolina>; Erin Jordan.

⁸⁰ See S. Haack, et al., *Genes Indicative of Zoonotic & Swine Pathogens are Persistent in Stream Water & Sediment Following a Swine Manure Spill*, 81 APPLIED & ENVTL. MICROBIOLOGY 3430 (2015).

⁸¹ See, e.g., Press Release: NC Dep't of Agric. & Consumer Servs., Flood Crops Cannot Be Used for Human Food (Sep. 21, 2018) ("Farmers whose crops were flooded . . . face not only the prospect of lower yields and loss of quality, but also the reality that those crops cannot be used for human food.").

⁸² ERS, TRENDS IN HOG MANURE MANAGEMENT, *supra* note 75, at iii (recognizing that liquid manure storage systems "magnif[y] the risk that manure nutrients (nitrogen, phosphorous, and potassium) and pathogens might flow into ground and surface water due to overapplication of manure on crops or leakage from manure storage facilities"); see, e.g., M. Mallin, et al., *Industrial Swine & Poultry Production Causes Chronic Nutrient & Fecal Microbial Stream Pollution*, 226 WATER, AIR & SOIL POLLUTION 407 (2015); C. Heaney, et al., *Source Tracking Swine Fecal Waste in Surface Water Proximal to Swine CAFOs*, 511 SCI. TOTAL ENVTL. 676 (2015); L. Casanova, et al., *Antibiotic-Resistant Salmonella in Swine Wastes & Farm Surface Waters*, 71 LETTERS IN APPLIED MICROBIOLOGY 117, 120 (2020) (salmonella, including antibiotic-resistant salmonella, was present in environmental waters associated with hog CAFOs); S. Hatcher, et al. *Occurrence of MRSA in Surface Waters Near Industrial Hog Operation Spray Fields*, 565 SCI. TOTAL ENVTL. 1028 (2016) (MRSA and MDRSA were present in surface waters near industrial hog spray fields); L. He, et al., *Discharge of Swine Wastes Risks Water Quality & Food Safety: Antibiotics & Antibiotic Resistance Genes From Swine Sources to the Receiving Environments*, 92 ENVTL. INT'L 210 (2016) (vegetables irrigated with swine wastewater can contain antibiotic resistant genes).

⁸³ See M. Carrel, et al., *Pigs in Space: Determining the Environmental Justice Landscape of Swine CAFOs in Iowa*, 13 INT'L J. ENVTL. RES. PUBLIC HEALTH 1, 13 (2016) (areas with "high densities of swine" are "significant hotspots of hog manure spills" with "uneven exposure to the negative impacts of uncontrolled manure release"); J. Casey, et al., *High-Density Livestock Operations, Crop Field Application of Manure, & Risk of Community-Associated Methicillin-Resistant Staphylococcus aureus Infection in Pennsylvania*, 172 JAMA INTERNAL MEDICINE 1980 (2013) (residents near manure application sites and confinement facilities had increased rates of MRSA and skin and soft tissue infection); see also J. Kravchenko, et al., *Mortality & Health Outcomes in North Carolina Communities Located in Close Proximity to Hog Concentrated Animal Feeding Operations*, 79 NC MED. J. 278 (2018) ("[C]ommunities located near hog CAFOs had higher all-cause and infant mortality, mortality due to anemia, kidney disease, tuberculosis, septicemia, and higher hospital admissions . . ."); V. Guidry, et al., *Connecting Environmental Justice & Community Health: Effects of Hog Production in North Carolina*, 79 NC MED. J. 324 (2018); STEVE WING & JILL JOHNSTON, INDUSTRIAL HOG OPERATIONS IN NORTH CAROLINA DISPROPORTIONATELY IMPACT AFRICAN-AMERICANS, HISPANICS & AMERICAN INDIANS (2014).

manure near their homes.⁸⁴ “It is past time to acknowledge the full harms that the unreformed practices of hog farming are inflicting.” *McKiver v. Murphy Brown, LLC*, 980 F.3d 937, 977 (4th Cir. 2020) (Wilkinson, J. concurring).

In sum, corporate consolidation has forced U.S. hog and dairy production to shift to a highly concentrated and industrialized model of animal production that generates significant amounts of pollution and waste, and externalizes costs onto local communities and the public.

C. Industrial dairy and hog operations emit significant amounts of methane and other air pollutants.

Industrial dairy and hog operations rely on the corporate-driven model of production to maximize the stocking density of dairy cows and hogs in full confinement conditions, and generate significantly more manure, than traditional, pasture-based farms. Consequently, industrial dairy and hog operations emit significantly more methane (CH₄) than pasture-based farms.⁸⁵ As EPA expressly acknowledged in the most recent U.S. GHG Inventory, the expansion of industrial dairy and hog operations, and the facilities in which they confine animals and store their waste, are responsible for causing methane emissions from this sector to increase dramatically in recent decades.⁸⁶

1. Enteric Fermentation

Industrial dairy operations are significant sources of methane emissions from enteric fermentation, which is a by-product of animals’ digestive processes, also known as “cow burps.”⁸⁷ As EPA explained in the most recent U.S. GHG Inventory, methane emissions from enteric fermentation increase as herd size and confinement-based production increases and feed

⁸⁴ See, e.g., Mery P. Dalesio, *Pork Giant Smithfield Foods Loses Another Neighbors’ Lawsuit*, US NEWS (Mar.3, 2019), <https://www.usnews.com/news/best-states/north-carolina/articles/2019-03-08/pork-giant-smithfield-foods-loses-another-neighbors-lawsuit>; see also ERS, TRENDS IN HOG MANURE MANAGEMENT, *supra* note 75, at iii (“[I]ncreased concentration of hogs per farm has led to conflicts with nearby residents or communities over odor and air quality . . .”).

⁸⁵ For further discussion on the benefits of pasture, including the capacity to sequester carbon dioxide in soil, see Part V.C.1.

⁸⁶ See *supra* note 50.

⁸⁷ EPA, U.S. GHG INVENTORY, *supra* note 50, at 5-3. Ruminant animals, such as dairy cows, “are the major emitters of CH₄ because of their unique digestive system.” *Id.* Although non-ruminant animals, such as hogs, “also produce CH₄ emissions through enteric fermentation,” they “emit significantly less CH₄ on a per-animal-mass basis than ruminants because the capacity of the large intestine to produce CH₄ is lower.” *Id.*

In 2018, dairy cows emitted 24.5 percent (or 43.6 mmt CO₂ eq.) of all methane emissions from enteric fermentation, and hogs emitted 1.6 percent (or 2.8 mmt CO₂ eq.). *Id.* at 5-4 tbl.5-3.

digestibility decreases.⁸⁸ Accordingly, by enabling dairy operators to increase herd size and productivity to unprecedented levels, the expansion of dairy confinement facilities and purchased feed is largely responsible for causing enteric emissions from dairy cows to increase by 10.7 percent (or 4.2 mmt CO₂ eq.) in the last three decades.⁸⁹ Likewise, the decrease in feed quality and increase in productivity associated with the expansion of industrial hog facilities have caused enteric emissions from hogs to increase by 40 percent (or 0.8 mmt CO₂ eq.) over this same period.⁹⁰ The corporate-driven confinement model thus maximizes enteric methane emissions compared to pasture-based systems, where stocking density is inherently limited by grazeable acres.

2. Manure Management

Industrial dairy and hog operations are the two largest sources of methane emissions from manure management.⁹¹ According to EPA, “the shift toward larger dairy and swine facilities since 1990 has translated into an increasing use of liquid manure management systems, which have higher potential CH₄ emissions than dry systems.”⁹² Unlike manure deposited on pasture or rangelands, which “decompose[s] aerobically” and produces “little or no CH₄,”⁹³ manure handled in liquid-based systems (e.g., liquid/slurry tanks or pits) decomposes anaerobically and produces large amounts of methane.⁹⁴ Methane emissions also increase when producers use

⁸⁸ *Id.* at 2-20 (noting that increased levels of methane emissions from enteric fermentation “generally follows the increasing trends in cattle populations” and decreasing “digestibility of feed”); 5-3 (explaining that “lower feed quality and/or higher feed intake leads to higher CH₄ emissions,” and “[f]eed intake is positively connected to . . . level of activity and production” and thus varies “among different management practices . . . (e.g., animals in feedlots or grazing on pasture”); 5-11 (noting that “the greater the energy content of the feed, the greater the potential for CH₄ emissions”); *see also* USDA, QUANTIFYING GREENHOUSE GAS SOURCES & SINKS IN ANIMAL PROD. SYS., at 5-6 (explaining how animal diet and intake affects enteric fermentation emissions).

⁸⁹ EPA, U.S. GHG INVENTORY, *supra* note 50, at 5-4 tbl.5-3; 2-19.

⁹⁰ *Id.* at 5-4 tbl.5-3.

⁹¹ In 2018, dairy and hog operations emitted 88.3 percent (or 54.5 mmt CO₂ eq.) of all methane emissions from manure management. *Id.* at 5-12 tbl.5-7. Specifically, dairy operations emitted 52 percent (32.3 mmt CO₂ eq.) of total methane emissions from manure management, and hog operations emitted 36 percent (22.2 mmt CO₂ eq.). *Id.* Note: U.S. GHG Inventory does not provide separate enteric methane data for industrial dairy and hog operations and pasture-based operations.

⁹² *Id.* at 5-12; FOOD CLIMATE RESEARCH NETWORK (FCRN), GRAZED & CONFUSED 27 (2017); USDA, QUANTIFYING GHG SOURCES, *supra* note 88, at 5-8 (noting that manure deposited onto confinement flooring, rather than pasture, begins to emit methane almost immediately).

⁹³ EPA, U.S. GHG INVENTORY, *supra* note 50, at 5-10.

⁹⁴ *Id.*; *see also* J. Wightman, et al., *New York Dairy Manure Management Greenhouse Gas Emissions & Mitigation Costs (1992–2022)*, 45 ENVTL. QUALITY 266 (2015) (finding that increased use of liquefied manure management systems was associated with a substantial increase in methane emissions); S. Petersen, *Greenhouse Gas Emissions from Liquid Dairy Manure: Prediction & Mitigation*, 101 J. DAIRY SCI. 6642 (2018).

long-term storage systems, such as lagoons, which can collect and hold liquefied manure for 10 to 15 years.⁹⁵

Consequently, the expansion of industrial dairy and hog operations, and “the resultant effects on manure management system[s]” and farm size, has caused overall methane emissions from manure management to increase by 98.8 percent (or 24.3 mmt CO₂ eq.) in recent decades.⁹⁶ Between 1990 and 2018, methane emissions from manure management at industrial dairy and hog operations increased by 80.4 percent. Specifically, industrial dairy and hog operations are responsible for causing methane emissions from manure management to increase by 120 percent at dairy operations, and 43 percent at hog operations, since 1990.⁹⁷ Overall, industrial dairy and hog operations have caused methane emissions from manure management to increase by 98.8 percent since 1990. Moreover, several recent studies have found that EPA’s U.S. GHG Inventory significantly underestimates methane emissions from liquid manure storage,⁹⁸ largely because EPA’s emission factors do not reflect recent developments in confinement animal production and liquefied manure management.⁹⁹ Under a revised approach, methane emissions from industrial hog and dairy operations would be higher for both enteric fermentation and manure management.

⁹⁵ See EPA, U.S. GHG INVENTORY, *supra* note 50, at A-348 tbl.A-190; V. Sokolov, et al., *GHG Emissions from Gradually-filled Liquid Dairy Manure Storages in Different Levels of Inoculant*, 115 NUTRIENT CYCLING IN AGROECOSYSTEMS 455 (2019) (“On average, gradually-filled [liquid manure] tanks had 1.8°C higher manure temperature, which may have contributed to a 12% increase in total CH₄ emissions,” and a “28% increase in total NH₃ emissions.”).

⁹⁶ EPA, U.S. GHG INVENTORY, *supra* note 50, at 5-12 tbl.5-7; 2-20 (“The majority of the increase observed in CH₄ resulted from swine and dairy cattle manure . . .”).

⁹⁷ *Id.* at 5-12 tbl.5-7; *see also* J. Wightman, et al., *supra* note, at 269-70 (although total number of cows in New York has decreased since 1992, methane emissions has increased dramatically due to “the shift toward anaerobic manure storage systems”).

⁹⁸ See, e.g., J. Owen, et al., *Greenhouse Gas Emissions from Dairy Manure Management: A Review of Field-based Studies*, 21 GLOBAL CHANGE BIO. 550 (2015) (suggesting that “current greenhouse gas emission factors generally underestimate emissions from dairy manure”); A. Leytem, et al., *Methane Emissions from Dairy Lagoons in the Western United States*, 100 J. DAIRY SCI. 6803 (2017) (“The [EPA] method underestimated CH₄ emissions [from an anaerobic lagoon] by 48%.”); H. Baldé, et al., *Measured Versus Modeled Methane Emissions From Separated Liquid Dairy Manure Show Large Model Underestimates*, 230 AGRIC. ECOSYSTEMS & ENVIRONMENT 261 (2016) (“Comparisons between measured and modeled CH₄ emissions showed that both the IPCC methane conversion factor (0.17) for cool climates (10 °C or less), and the USEPA model, underestimated annual emissions by up to 60%.”); M. Borhan, et al., *Greenhouse Gas Emissions from Ground Level Area Sources in Dairy & Cattle Feedyard Operations*, 2 ATMOSPHERE 303 (2011) (finding that an industrial dairy’s aggregate CH₄ emission rate was significantly higher than EPA’s estimated rate).

⁹⁹ See J. Owen, et al., *supra* note 98 (highlighting “liquid manure systems as promising target areas for greenhouse gas mitigation”); J. Wolf, et al., *Revised Methane Emissions Factors & Spatially Distributed Annual Carbon Fluxes For Global Livestock*, 12 CARBON BALANCE MGMT. 16 (2017) (finding that IPCC emission factors underestimate methane missions from hog and dairy operations because they fail to account for “reported recent changes in animal body mass, feed quality and quantity, milk productivity, and management of animals and manure”); A. Leytem, *supra* note 98 (“An alternative methodology, using volatile solids degradation factor, provided a more accurate estimate of annual emissions from the lagoon system and may hold promise for applicability across a range of dairy lagoon systems in the United States.”).

D. Methane emissions from industrial hog and dairy operations have a substantial impact on climate change.

As discussed above, industrial dairy and hog operations emit large amounts of methane pollution into the ambient air. In 2018, industrial hog and dairy operations in the United States generated approximately 83.6 mmt CO₂ eq. of methane emissions from enteric fermentation (29.14 mmt CO₂ eq.) and manure management (54.5 mmt CO₂ eq.).¹⁰⁰ These emissions constitute 33 percent of total U.S. methane emissions from agriculture (253 mmt CO₂ eq.),¹⁰¹ and 13 percent of total U.S. methane emissions from all anthropogenic sources (634.5 mmt CO₂ eq.).¹⁰²

Table 1. Total U.S. GHG & Methane Emissions in 2018 (MMT CO₂ Eq.)

Total U.S. GHG Emissions (all sectors & gases)	6,676.6
<i>Agriculture Sector</i>	618.5
<i>Enteric Fermentation</i>	177.6
<i>Manure Management</i>	81.1
Total U.S. Methane Emissions (all sectors)	634.5
<i>Agriculture Sector</i>	253.0
<i>Enteric Fermentation</i>	177.6
<i>Manure Management</i>	61.7

Table 2. Contribution of Industrial Dairy & Hog Operations to Total U.S. Methane Emissions from Enteric Fermentation (MMT CO₂ Eq.)

Total CH₄ Emissions from Enteric Fermentation	177.6
<i>Dairy Cows</i>	43.6
<i>Industrial Dairy Operations (500 or more cows)</i>	26.4
<i>Hogs</i>	2.8
<i>Industrial Hog Operations (1,000 or more hogs)</i>	2.7
<i>All Other Livestock</i>	131.2

¹⁰⁰ According to EPA's methodologies for calculating methane emissions, dairy cows and hogs contributed 43.6 and 2.8 mmt CO₂ eq., respectively, to total U.S. methane emissions from enteric fermentation. See EPA, U.S. GHG INVENTORY, *supra* note 50, at A-319 tbl.A-180. Although EPA's model does not distinguish between animals in confinement facilities or pastures, large operations (500 or more dairy cows or 1,000 or more hogs) account for approximately 61% of all U.S. dairy cow inventory, and 97% of all U.S. hog inventory. See *supra* notes 53 and 73. Thus, using these percentages to calculate industrial operations' relative contribution to total enteric emissions, large dairy and hog operations account for approximately 29.14 mmt CO₂ eq. of total U.S. enteric methane emissions (26.42 and 2.72 mmt CO₂ eq., respectively).

¹⁰¹ EPA, U.S. GHG INVENTORY, *supra* note 50, at 2-19 tbl.2-7.

¹⁰² *Id.* at 2-3 tbl.2-1.

Table 3. Contribution of Industrial Dairy & Hog Operations to Total U.S. Methane Emissions from Manure Management (MMT CO₂ Eq.)

Total CH₄ Emissions from Manure Management	61.7
<i>Dairy Cows</i>	32.3
<i>Industrial Dairy Operations (500 or more cows)</i>	32.3
<i>Hogs</i>	22.2
<i>Industrial Hog Operations (1,000 or more hogs)</i>	22.2
<i>All Other Livestock</i>	7.2

Table 4. Summary of Contribution of Industrial Dairy & Hog Operations to Total U.S. GHG & Methane Emissions in 2018 (MMT CO₂ Eq.)

Enteric Fermentation	29.1	16% of total U.S. methane emissions from <i>all enteric fermentation processes</i>
<i>Industrial Dairy</i>	26.4	
<i>Industrial Hog</i>	2.7	
Manure Management	54.5	88% of total U.S. methane emissions from <i>all manure management processes</i>
<i>Industrial Dairy</i>	32.3	
<i>Industrial Hog</i>	22.2	
Total CH₄ Emissions from Industrial Dairy & Hog Operations	83.6	Contribution to Total U.S. Methane Emissions 33% of total U.S. methane emissions from <i>agricultural sector</i> 13% of total U.S. methane emissions from <i>all sectors</i> Contribution to Total U.S. GHG emissions 14% of total U.S. GHG emissions from <i>agricultural sector</i> 1.3% of total U.S. GHG emissions from <i>all sectors</i>

Methane is the second most abundant anthropogenic greenhouse gas, after carbon dioxide. As an anthropogenic greenhouse gas, methane contributes to rising global temperatures and in turn, the serious public health and welfare problems associated with climate change, by trapping heat in Earth's atmosphere. EPA recognized the significance of these climate impacts in 2009, when the agency found that methane and five other anthropogenic greenhouse gases "endanger both the public health and the public welfare of current and future generations by causing or contributing to climate change."¹⁰³

Thus, because industrial dairy and hog operations emit large amounts of methane, these operations significantly contribute to overall GHG emissions. Moreover, because methane is a particularly harmful and potent greenhouse gas, industrial dairy and hog operations have a major impact on rising temperatures.

¹⁰³ 2009 GHG Endangerment Finding, *supra* note 31.

1. Contribution to Total GHG Levels

Industrial dairy and hog operations contribute to rising levels of total U.S. GHG emissions. Specifically, methane emissions from these operations account for 14 percent of total U.S. agricultural GHG emissions (or 618.5 mmt CO₂ eq.), and 1.3 percent of total U.S. GHG emissions (or 6,676.6 mmt CO₂ eq.).¹⁰⁴ These figures reflect EPA's most recent U.S. GHG Inventory, which recent studies suggest significantly underestimate emissions from both enteric fermentation and manure management.¹⁰⁵

As discussed above, methane emissions from industrial dairy and hog operations have increased dramatically in recent decades.¹⁰⁶ However, from 1990 to 2018, total U.S. GHG emissions have only increased by 3.7 percent.¹⁰⁷ Further, although total U.S. methane emissions have *decreased* by 18 percent since 1990, total U.S. methane emissions from agricultural activities have *increased* by 16.3 percent during this same period.¹⁰⁸ Therefore, while total GHG emissions from other sectors are declining due to federal regulatory efforts, total GHG emissions from the agricultural sector are increasing because EPA has failed to implement methane emission standards for industrial hog and dairy operations, which significantly contribute to rising temperatures and domestic GHG levels.

2. Notable Short-Term Climate Change Impacts

While all greenhouse gases contribute to climate change and endanger public health and welfare, methane emissions from industrial dairy and hog operations are particularly potent because methane is far more effective at trapping heat in the atmosphere than other pollutants.¹⁰⁹

According to the EPA, reducing methane emissions is uniquely important for climate change mitigation because “methane is a potent GHG with a 100-year [global warming potential] that is 28 to 36 times greater than that of carbon dioxide.”¹¹⁰ Consequently, over the next 100 years, methane will trap more heat in the atmosphere than carbon dioxide, resulting in more overall warming. Moreover, when this timescale is shortened to 20 years, methane's climate impacts are even more pronounced. Because methane does not stay in the atmosphere as long as carbon dioxide, methane has a 20-year global warming potential that is 72 to 87 times greater

¹⁰⁴ EPA, U.S. GHG INVENTORY, *supra* note 50, at 2-3 tbl.2-1.

¹⁰⁵ See *supra* note 98.

¹⁰⁶ EPA, U.S. GHG INVENTORY, *supra* note 50, at 5-1 tbl.5-1. From 1990 to 2018, total GHG emissions from all agriculture sources increased by 11.6% (or 64.1 mmt CO₂ eq.). *Id.* Although CO₂, CH₄, and N₂O agricultural emissions also increased during that period, methane emissions increased the most—CH₄ emissions rose by 16.3%, whereas CO₂ emissions only increased by 1.5% (or 1 mmt CO₂ eq.) and N₂O only increased by 8.4% (or 27.7 mmt CO₂ eq.). *Id.*

¹⁰⁷ *Id.* at 2-3 tbl.2-1.

¹⁰⁸ *Id.*

¹⁰⁹ *Id.*

¹¹⁰ See 2016 Oil & Natural Gas Rulemaking, *supra* note 32, at 35,830 n.15.

than carbon dioxide.¹¹¹ This 20-year global warming potential holds significance when the science and policy consensus calls for reductions in the near term, meaning near term methane reductions especially benefit climate stabilization goals.

Therefore, reducing methane emissions is critical for preventing irreversible climate change. As the IPCC warned, if global temperatures do not decrease significantly in the near future, there is a “very high” risk of “severe and widespread impacts on unique and threatened systems,” “large risks to food security and compromised normal activities,” and other “abrupt and irreversible” climate change impacts.¹¹² As such, reducing methane emissions from the animal agriculture sector can help EPA achieve short-term climate goals.¹¹³

In sum, methane emissions from industrial dairy and hog operations pose unique threats to public health and welfare by contributing to increasing overall GHG levels and imposing a far greater impact on global warming than carbon dioxide. Therefore, reducing methane emissions from industrial dairy and hog operations will have a substantial impact on climate change.¹¹⁴

V. DISCUSSION

Section 111 of the Clean Air Act requires EPA to address methane emissions from industrial hog and dairy operations if the Agency finds that these emissions endanger public health or welfare. First, EPA must exercise discretion to list fully confined production facilities and liquefied manure management systems on industrial hog and dairy operations as stationary sources that emit significant amounts of methane into the ambient air.¹¹⁵ Second, within one year of listing industrial dairy and hog operations, EPA must set standards to reduce methane emissions from new and modified sources within these source categories.¹¹⁶ Third, within one year of listing, EPA must also promulgate guidelines governing state standards to reduce methane emissions from existing sources within these source categories because EPA is not currently regulating these emissions under the Clean Air Act’s national ambient air quality standards or hazardous air pollutant programs.¹¹⁷

¹¹¹ EPA, U.S. GHG INVENTORY, *supra* note 50, A-504 tbl.A-252; IPCC, AR5 REPORT, *supra* note 42, at 87 tbl.1 (“The choice of time horizon markedly affects the weighting especially of short-lived climate forcing agents, such as methane.”); EPA, *Understanding Global Warming Potential* (last accessed Mar. 31, 2021), <https://www.epa.gov/ghgemissions/understanding-global-warming-potentials> (noting that because CH₄ “has a short lifetime, the 100-year GWP of 28–36 is much less than the 20-year GWP of 84–87”).

¹¹² IPCC, AR5 REPORT, *supra* note 42, at 63. In a recent, alarm-raising special report, IPCC identified the urgent need to limit global warming to 1.5°C by dramatically reducing emissions. IPCC, GLOBAL WARMING OF 1.5°C, at 4–11 (2019). To achieve this goal, IPCC calls for a 35 percent reduction in methane emissions by 2050 (from 2010 levels). *Id.* at 12.

¹¹³ See, e.g., M. Saunio, et al., *The Growing Role of Methane in Anthropogenic Climate Change*, 11 ENVTL. RES. LETT. 1, 4 (2016).

¹¹⁴ See, e.g., FCRN, GRAZED & CONFUSED, *supra* note 92, at 72–73.

¹¹⁵ See 42 U.S.C. § 7411(b)(1)(A).

¹¹⁶ *Id.* § 7411(b)(1)(B).

¹¹⁷ *Id.* § 7411(d)(1).

A. Industrial hog and dairy operations are source categories under section 111 of the Clean Air Act.

Section 111 expressly requires EPA to maintain “a list of categories of stationary sources” that the Administrator finds, in their judgment, “causes, or contributes significantly to, air pollution which may reasonably be anticipated to endanger public health or welfare.”¹¹⁸ Thus, because industrial dairy and hog operations with fully confined production facilities and liquefied manure management systems satisfy this standard, EPA must add these source categories to its list.

1. Industrial hog and dairy operations are “stationary sources” of methane and other air pollutants.

Section 111 defines a “stationary source” as “any building, structure, facility, or installation which emits or may emit any air pollutant.”¹¹⁹ The Clean Air Act broadly defines “air pollutant” as “any air pollution agent or combination of such agents, including any physical, chemical, biological . . . substance or matter which is emitted into or otherwise enters the ambient air.”¹²⁰ Industrial hog and dairy operations are “stationary sources” because fully confined production facilities and liquefied manure management systems emit large volumes of methane, a potent greenhouse gas and “air pollutant” under the Clean Air Act.¹²¹

i. *Industrial hog and dairy operations use “buildings, structures, facilities, and installations” for animal confinement and liquefied manure management.*

Industrial dairy and hog operations rely heavily on restrictive housing, confined production facilities, liquid/slurry tanks, liquefied manure lagoons, and other “building[s], structure[s], facilit[ies], and installation[s]” to confine animals for each stage of production and manage their waste.

Fully Confined Production Systems

Both industrial dairy and hog operations rely on confinement facilities to concentrate large numbers of dairy cows and hogs in a small amount of space. Unlike pasture-based dairies, which enable animals to graze and forage in open fields, industrial dairy operations confine dairy cows in restrictive housing systems, such as free stall barns, for the duration of their lives.¹²² In fact, most large operations (i.e., 500 or more cows) confine dairy cows in freestalls with concrete

¹¹⁸ *Id.* § 7411(b)(1)(A).

¹¹⁹ *Id.* § 7411(a)(3).

¹²⁰ *Id.* § 7602(g); *see also Massachusetts v. EPA*, 549 U.S. at 528-29 (“The Clean Air Act’s sweeping definition of ‘air pollutant’ . . . embraces all airborne compounds of whatever stripe . . .”).

¹²¹ *Massachusetts v. EPA*, 549 U.S. at 529 (finding that “[c]arbon dioxide, methane, [and] nitrous oxide” are “air pollutants” under the Clean Air Act’s “unambiguous” definition).

¹²² “Tie stall” barns restrain cows “to a particular stall by a neck collar attached to the stall by a chain,” and “free stall” barns restrain cows to “cubicles or ‘beds’ in which dairy cows are free to enter and leave at will.” APHIS, DAIRY CATTLE MGMT. PRACTICES IN THE UNITED STATES, 2014, at 4 (2016).

flooring and no outside access,¹²³ and “[p]asture access for [dairy] cows decrease[s] as herd size increase[s].”¹²⁴ Likewise, larger and more industrialized dairies typically rely on restrictive feeding systems, which often confine dairy cows with head locks or fence-line stanchion feed lines.¹²⁵ Industrial hog operations also rely on confinement systems to produce hogs in highly specialized and very large, climate-controlled buildings, with no outdoor access.¹²⁶ Further, because industrial dairy and hog operations confine and feed animals indoors, they must also store raw materials, such as imported feed and bedding materials, on-site in built installations and structures.¹²⁷

Liquefied Manure Management Systems

Transfer & Storage

Both industrial dairy and hog operations rely on complex systems for managing animal manure and waste. In particular, industrial dairy and hog operations need either a scrape system or flush system to collect manure deposited on housing floors.¹²⁸ After collection, industrial hog and dairy operations transport the manure to long-term storage. Because industrial dairy and hog operations generate more manure than they can dispose at once, these operations must store large amounts of liquefied manure for extended periods in physical installations, such as anaerobic lagoons or liquid/slurry tanks.¹²⁹

Disposal

In addition, industrial dairy and hog operations require systems for disposing of stored manure and wastewater. For the majority of industrial hog and dairy operations that rely on anaerobic lagoons, they remove manure from anaerobic lagoons “every 5 to 15 years,”¹³⁰ and

¹²³ *Id.* at 163, 174.

¹²⁴ *Id.* at 166, 167 (noting that the vast majority of small and very small dairies (99 or fewer cows) provided pasture access to cows during summer, whereas only 3.9% of large dairies provided such access).

¹²⁵ *Id.* at 190.

¹²⁶ APHIS, BASELINE REFERENCE OF SWINE HEALTH & MGMT. IN THE UNITED STATES 27, 36, 59, 75 (2015) (noting that larger hog operations are more likely to rely total confinement facilities for every stage of hog production than smaller operations).

¹²⁷ See APHIS, DAIRY MGMT. PRACTICES, *supra* note 122, at 185 (demonstrating that larger dairies are more likely to rely on feed from outside sources).

¹²⁸ Scrape systems and flush systems are “means of removing manure and other wastes from swine [and dairy] buildings for storage or treatment outside the building.” D. Vanderholm, et al., *Scraper Systems for Removing Manure from Swine Facilities* (Aug. 28, 2019), <https://swine.extension.org/scraper-systems-for-removing-manure-from-swine-facilities>; EPA, U.S. GHG INVENTORY, *supra* note 50, at A-330 (“Based on EPA site visits and the expert opinion of state contacts, manure from dairy cows at medium (200 through 700 head) and large (greater than 700 head) operations are managed using either flush systems or scrape/slurry systems.”); D. MEYER, ET AL., UNIV. OF CALIFORNIA, DAVIS, CHARACTERIZE PHYSICAL & CHEMICAL PROPERTIES OF MANURE IN CALIFORNIA DAIRY SYSTEMS TO IMPROVE GREENHOUSE GAS EMISSION ESTIMATES (2019).

¹²⁹ EPA, U.S. GHG INVENTORY, *supra* note 50, at 5-11 to -12; A-348 tbl.A-190.

¹³⁰ *Id.* at tbl.A-190.

dispose the accumulated sludge by spreading it onto nearby agricultural fields.¹³¹ Operators remove liquid from the lagoons more frequently, and dispose of the accumulated wastewater by spraying it on crops.¹³² In addition to manure application and disposal systems, industrial hog and dairy operations rely on other built systems, such as evaporation ponds, to control runoff from their animal confinement and manure storage structures.¹³³

EPA already recognizes liquefied manure management systems on industrial hog and dairy operations as a “source category” of methane emissions subject to mandatory GHG emission reporting requirements.¹³⁴ Under EPA regulations, a “manure management system” is “a system that stabilizes and/or stores livestock manure, litter, or manure wastewater in one or more of the following system components: Uncovered anaerobic lagoons, liquid/slurry systems with and without crust covers (including but not limited to ponds and tanks), storage pits, digesters, solid manure storage, dry lots (including feedlots), . . . deep bedding systems for cattle and swine, manure composting, and aerobic treatment.” 40 C.F.R. § 98.360(b). EPA also expressly excludes from this source category “system components at a livestock facility that are unrelated to the stabilization and/or storage of manure such as daily spread or pasture/range/paddock systems or land application activities.”¹³⁵ Accordingly, EPA can rely on the same definition for purposes of listing hog and dairy manure management systems under section 111.

In sum, industrial hog and dairy operations rely on several highly specialized “building[s], structure[s], facilit[ies], [and] installation[s]” for animal confinement, liquid manure storage, and manure disposal, satisfying the first half of the definition of a stationary source under section 111.¹³⁶

ii. *Industrial hog and dairy operations emit large amounts of “air pollutants” during animal confinement and liquefied manure management.*

The various “building[s], structure[s], facilit[ies], [and] installation[s]” on which industrial hog and dairy operations rely for animal confinement and liquefied manure management emit significant amounts of methane, which is a potent greenhouse gas and “air

¹³¹ *Id.*; see also C. Gilbertson, et al., *Pumping Liquid Manure from Swine Lagoons & Holding Ponds* (Aug. 24, 2019) (describing different methods of distributing liquid manure onto croplands), <https://swine.extension.org/pumping-liquid-manure-from-swine-lagoons-and-holding-ponds>.

¹³² See *supra* note EPA, U.S. GHG INVENTORY, *supra* note 50, at A-348 tbl.A-190; H. Aguirre-Villegas, et al., *Evaluating Greenhouse Gas Emissions From Dairy Manure Management Practices Using Survey & Lifecycle Tools*, 143 J. CLEANER PROD. 169, 173-34 (2017).

¹³³ EPA, U.S. GHG INVENTORY, *supra* note 50, at tbl.A-190.

¹³⁴ 40 C.F.R. § 98.360; see also EPA-430-F-09-026R, Final Rule: Mandatory Reporting of GHGs (Nov. 2009).

¹³⁵ 40 C.F.R. § 98.360(c).

¹³⁶ 42 U.S.C. § 7411(a)(3).

pollutant” under the Clean Air Act.¹³⁷ These stationary sources are also significant sources of other harmful “air pollutants,” including ammonia, hydrogen sulfide, volatile organic compounds, and particulate matter.

Fully Confined Production Systems

Both fully confined dairy and hog production facilities generate large amounts of methane and other pollutants. As the EPA recognized, confined production “[b]uildings” “concentrate the emissions of air pollution from a smaller area and/or through vents,” which “can increase localized levels of air emissions,” and “offer[] opportunities to target emissions of pollutants to reduce the amount that is released to the atmosphere.”¹³⁸ In particular, dairy production facilities are major sources of enteric methane emissions because they confine large numbers of cows with high input diets that includes non-forage feed like corn silage.¹³⁹ Fully confined dairy and hog housing and feeding systems, such as free stall barns, also generate methane by allowing manure to accumulate on floors or in short-term manure holding systems. Since the amount of methane emitted from manure increases when the air temperature in the facility rises,¹⁴⁰ these emissions will likely increase due to climate change. In addition to methane, confined dairy and hog facilities contribute to rising GHG levels by emitting carbon dioxide and nitrous oxide.¹⁴¹ These facilities also emit other harmful and odorous pollutants,

¹³⁷ See *Massachusetts v. EPA*, 549 U.S. at 529 (“Carbon dioxide, methane, nitrous oxide and hydrofluorocarbons are without a doubt ‘physical [and] chemical . . . substance [s] which [are] emitted into . . . the ambient air.’”) (citing 42 U.S.C. § 7602(g) (definition of “air pollutant”)).

¹³⁸ USDA & EPA, AGRICULTURAL AIR QUALITY CONSERVATION MEASURES: REFERENCE GUIDE FOR POULTRY & LIVESTOCK PRODUCTION SYSTEMS 18 (2017).

¹³⁹ C. Rotz, *Modeling Greenhouse Gas Emissions From Dairy Farms*, 101 J. DAIRY SCIENCE 6675 (2018) (“Emissions per cow were about 15% less for the grazing operations, which used smaller cattle with lower feed intake and milk production [than confinement operations].”); C. Arndt, et al., *Short-Term Methane Emissions From 2 Dairy Farms in California Estimated by Different Measurement Techniques & U.S. EPA Inventory Methodology*, 101 J. DAIRY SCI. 11461, 11473 (2018) (finding that enteric emissions from industrial dairy housing are strongly correlated with herd size and dry matter intake).

¹⁴⁰ See, e.g., A. Leytem, *Greenhouse Gas & Ammonia Emissions from an Open-Freestall Dairy in Southern Idaho*, 42 J. ENVTL. QUALITY 10, 18 (2013); M. Borhan, et al., *Determining Seasonal Greenhouse Gas Emissions from Ground-Level Area Sources in a Dairy Operation in Central Texas*, 61 J. AIR & WASTE MGMT. ASS’N 786 (2011).

¹⁴¹ See, e.g., F. Philippe, et al., *Review on Greenhouse Gas Emissions From Pig Houses: Production of Carbon Dioxide, Methane & Nitrous Oxide by Animals & Manure*, 199 AGRIC. ECOSYSTEMS & ENVIRONMENT 10 (2015) (emissions of CO₂, CH₄ and N₂O contribute to 81, 17 and 2% of total emissions from pig buildings, representing 3.87, 0.83 and 0.11 kg CO₂ equiv. per kg carcass, respectively); M. Borhan, et al., *supra* note 140; H. Joo, et al., *Greenhouse Gas Emissions From Naturally Ventilated Freestall Dairy Barns*, 102 ATMOSPHERIC ENVIRONMENT 384 (2015) (mean concentrations of methane in dairy freestall barns ranged from 26 to 180% above background concentrations).

such as ammonia, hydrogen sulfide, volatile organic compounds, and particulate matter.¹⁴² Ammonia emissions are not only highly irritating to local residents, but they are also a significant threat to the environment.¹⁴³ Ammonia can also transform into fine particulate matter, which is harmful to human health.¹⁴⁴ Further, confinement facilities are also a major source of ozone-forming volatile organic compounds due to manure deposited on facility floors,¹⁴⁵ feed storage and handling systems,¹⁴⁶ and other sources.

Liquefied Manure Management Systems

Liquefied hog and dairy manure management systems, such as settling basins for manure deposited on facility floors and anaerobic lagoons for long-term manure storage, are significant

¹⁴² See, e.g., X. Yang, et al., *Analysis of Particle-Borne Odorants Emitted From CAFOs*, 490 SCI. TOTAL ENVIRONMENT 322 (2014) (collecting total suspended particulates and PM₁₀ at the air exhaust of different types of hog CAFOs, including farrowing, gestation, weaning, and finishing buildings); G. Kafle, et al., *Emissions of Odor, Ammonia, Hydrogen Sulfide, & Volatile Organic Compounds from Shall-Pit Pig Nursery Rooms*, 39 BIOSYSTEMS ENGINEERING 76 (2014) (hog confinement facilities emit several harmful gases, including ammonia, hydrogen sulfide, carbon dioxide, and volatile organic compounds, and these emissions are directly correlated with the number of hogs in the facility); H. Joo, et al., *supra* note 141 (mean concentrations in dairy freestall barns ranged from 6 to 20% (CO₂) and 0 to 4% (N₂O) above background concentrations); G. Schaubberger, et al., *Empirical Model of Odor Emission From Deep-Pit Swine Finishing Barns to Derive a Standardized Odor Emission Factor*, 66 ATMOSPHERIC ENVIRONMENT 84 (2013) (odor from hog confinement facilities are a public nuisance and health hazard for surrounding communities, and these emissions are directly correlated with the number of hogs in the facility); I. Rumsey, et al., *Characterizing Reduced Sulfur Compounds Emissions From A Swine CAFO*, 94 ATMOSPHERIC ENVIRONMENT 458 (2014) (hydrogen sulfide emissions from hog confinement facilities contributed approximately 98% of total North Carolina H₂S swine CAFO emissions).

¹⁴³ Ammonia plays a major role in ecosystem acidification and eutrophication of soil and water, which significantly impairs aquatic and terrestrial ecosystems. See EPA, *Health & Environmental Effects of Particulate Matter* (Jun. 20, 2018), <https://www.epa.gov/pm-pollution/health-and-environmental-effects-particulate-matter-pm>; see, e.g., OECD, AMMONIA EMISSIONS: ACIDIFICATION & EUTROPHICATION 133–34 (2013); Forest Service, USDA, *Acidification Impacts* (last accessed Apr. 13, 2020), <https://webcam.srs.fs.fed.us/pollutants/acidification>.

¹⁴⁴ See EPA, *How Does Particulate Matter Affect Human Health* (Oct. 11, 2019), <https://www3.epa.gov/region1/airquality/pm-human-health.html>; see, e.g., E. Sanchis, et al., *A Meta-Analysis of Environmental Factor Effects on Ammonia Emissions From Dairy Cattle Houses*, 178 BIOSYSTEMS ENGINEERING 176 (2019) (ammonia emissions from dairy facilities were strongly correlated with air temperature and ventilation rate); K. James, et al., *Characterizing Ammonia Emissions From A Commercial Mechanically Ventilated Swine Finishing Facility & An Anaerobic Waste Lagoon In North Carolina*, 3.3 ATMOSPHERIC POLLUTION RESEARCH 279, 283-84 (2012) (emissions of atmospheric ammonia–nitrogen from hog confinement facility were greatest in the summer and spring, due to high number and average weight of hogs, and low ventilation rate).

¹⁴⁵ See, e.g., H. Sun, et al., *Alcohol, Volatile Fatty Acid, Phenol, & Methane Emissions From Dairy Cows & Fresh Manure*, 37 J. ENVTL. QUALITY 615 (2008) (methanol and ethanol emissions “increased over time, coinciding with increasing accumulation of manure on the chamber floor”)

¹⁴⁶ See, e.g., X. Yang, et al., *Quantification of Odorants in Animal Feeds at Commercial Swine & Poultry Operations*, 61 TRANSACTIONS OF THE ASABE 693 (2018) (animal feed from hog CAFOs emit odorants, including alcohols and nitrogen-containing compounds); B. Yuan, et al., *Emissions of Volatile Organic Compounds from CAFOs: Chemical Compositions & Separation of Sources*, 17 ATMOSPHERIC CHEMISTRY & PHYSICS 4945 (2017) (feed storage and handling emits VOCs, such as carboxylic acids, alcohols and carbonyls); L. Malkina, et al., *Identification & Quantitation of Volatile Organic Compounds Emitted From Dairy Silages & Other Feedstuffs*, 40 J. ENVTL. QUAL. 28 (2011) (silage and other feed storages on dairies emit volatile organic compounds); J. Ni, et al., *Volatile Organic Compounds at Swine Facilities: A Critical Review*, 89 CHEMOSPHERE 769 (2012).

sources of methane emissions.¹⁴⁷ In fact, multiple studies have successfully measured emissions from these sources,¹⁴⁸ and found that manure lagoons and basins have higher aggregate methane emissions than any other source on industrial hog and dairy operations.¹⁴⁹ Most notably, industrial hog and dairy operations generate methane by storing liquefied manure in anaerobic lagoons for long periods.¹⁵⁰ Because lagoons can store manure for several years, the amount of volatile solids in the system increases each month, resulting in an exponential increase in methane emissions over time.¹⁵¹ Further, because manure management emissions are strongly influenced by rising temperatures, temperature variation, rainfall, and other short-term disruptions,¹⁵² such emissions will increase substantially due to climate change.

In addition to releasing methane, liquefied manure management systems emit ammonia, carbon dioxide, hydrogen sulfide, volatile organic compounds, and other harmful air pollutants

¹⁴⁷ See J. Owen & W. Silver, *Greenhouse Gas Emissions from Dairy Manure Management: A Review of Field-based Studies*, 21 GLOBAL CHANGE BIO. 550, 555 (2015) (finding that “anaerobic lagoons were the largest source of methane [on dairies], more than three times that from enteric fermentation”).

¹⁴⁸ See, e.g., W. Todd, et al., *Methane Emissions from Southern High Plains Dairy Wastewater Lagoons in the Summer*, 166 ANIMAL FEED SCI. & TECH. 575 (2011) (“Uncovered anaerobic lagoons were a source of CH₄ emitted from [industrial dairy operation], and lagoons could be a control point for emission reductions.”).

¹⁴⁹ See, e.g., Borhan, *supra* note 98 (settling basin and anaerobic lagoons contributed 98% of aggregate methane emissions on industrial dairy operation); A. VanderZaag, et al., *Measuring Methane Emissions From Two Dairy Farms: Seasonal & Manure-Management Effects*, 194 AGRIC. & FOREST METEOROLOGY 259 (2014) (methane emissions from liquefied manure storage contributed up to 60% of the whole farm emissions); Arndt, *supra* note 139, at 11475 (methane emissions from liquefied manure storage contributed up to 79% of whole farm emissions); H. Aguirre-Villegas, et al., *Evaluating Greenhouse Gas Emissions From Dairy Manure Management Practices Using Survey Data And Lifecycle Tools*, 143 J. CLEANER PROD. 169, 177 (2017) (methane from long-term storage contributed 70% of total GHG emissions from large dairy).

¹⁵⁰ See EPA, U.S. GHG INVENTORY, *supra* note 50, at tbl.A-190 and 5-10 to -11 (noting that “manure storage” and “residency time” affects CH₄ production).

¹⁵¹ *Id.*; see, e.g., A. Leytem, et al., *Methane Emissions from Dairy Lagoons in the Western United States*, 100 J. DAIRY SCIENCE 6803 (2017) (methane emissions from manure lagoons were strongly correlated with the amount of manure solids entering the lagoon (volatile solids), amount of manure in lagoon (total solids), and chemical oxygen demand); Arndt, *supra* note 139, at 11473-74 (methane emissions from manure lagoons were strongly correlated with amount of manure solids in liquefied manure storage); H. Aguirre-Villegas, et al., *supra* note 149, at 177 (large dairy can reduce 47% of GHG emissions by “minimizing VS accumulation in storage to mitigate CH₄ emissions”); see also T. Flesch, et al., *Methane Emissions From A Swine Manure Tank in Western Canada*, 93 CAN. J. ANIM. SCI. 159 (2013) (methane emissions from concrete manure storage tank “were likely enhanced by an unusually long duration of manure storage [of 15 months]”).

¹⁵² See EPA, U.S. GHG INVENTORY, *supra* note 50, at 5-10 to -11 (noting that “[a]mbient temperature” and “moisture” affects methane production); see, e.g., Baldé, *supra* note 98 (methane emissions from manure storage tank were highest “when high manure temperature and high volume coincided” due to “high biodegradability of liquid manure fraction”); R. Grant, et al., *Methane & Carbon Dioxide Emissions From Manure Storage Facilities At Two Free-Stall Dairies*, 213 AGRIC. & FOREST METEOROLOGY 102 (2015) (warmer weather increases the mass ratio of CH₄ to CO₂ emissions of industrial dairy manure storage facilities); A. Leytem, et al., *Methane Emissions From Dairy Lagoons In The Western United States*, *supra* note 151, (finding that methane emissions from manure lagoon increased during events that agitated the lagoon surface, such as rainfalls and high winds); VanderZaag, *supra* note 149 (finding that methane emissions from manure storage increased 40 percent in the fall, when cows produced more manure, but emissions were highest during “agitation”).

and odors.¹⁵³ These emissions are not only annoying to human senses, but they are also harmful to human health.¹⁵⁴ Liquefied manure storage systems also emit nitrogen into the atmosphere as ammonia (NH₃), which can transform into nitrous oxide (N₂O), another potent GHG and air pollutant.¹⁵⁵ Further, ammonia emissions are a precursor to fine particulate matter in the atmosphere, which poses a significant threat to human health.¹⁵⁶ In addition, disposing of manure and wastewater onto nearby agricultural fields also emits volatile organic compounds and other harmful pollutants.¹⁵⁷

Accordingly, industrial dairy and hog operations are “stationary sources” under section 111 of the Clean Air Act because they rely on several highly specialized “building[s], structure[s], facilit[ies], [and] installation[s]” for animal confinement and manure management, and they emit significant amounts of the super pollutant methane—a potent “air pollutant” and greenhouse gas—directly into the ambient air.

2. Industrial hog and dairy operations satisfy the requisite standard for listing a source category under section 111.

EPA has authority to list fully confined dairy and hog production facilities and liquefied dairy and hog manure management facilities as source categories under section 111 because they

¹⁵³ A. Leytem, et al., *Greenhouse Gas & Ammonia Emissions from an Open-Freestall Dairy in Southern Idaho*, 42 J. ENVTL. QUAL. 10 (2013) (wastewater ponds on industrial dairy operation with anaerobic lagoons emitted ammonia, methane, and nitrous oxide); R. Grant, et al., *Manure Ammonia & Hydrogen Sulfide Emissions From A Western Dairy Storage Basin*, 44 J. ENVTL. QUALITY 127 (2015) (manure storage basins on industrial hog operation emitted hydrogen sulfide and ammonia).

¹⁵⁴ E. Nie, et al., *Characterization of Odorous Pollution & Health Risk Assessment of Volatile Organic Compound Emissions in Swine Facilities*, 223 ATMOSPHERIC ENVIRONMENT 117233 (2020) (manure storage had most odor activity on industrial hog operation, with emissions including methanethiol, dimethyl sulfide, and hydrogen sulfide, and exceeded cumulative carcinogenic risk threshold during the summer.); S. Trabue, et al., *Odorous Compounds Sources & Transport from a Swine Deep-Pit Finishing Operation: A Case Study*, 233 J. ENVTL. MGMT. 12 (2019) (finding that manure storage on industrial hog operation was the “main source of odorous compounds,” particularly hydrogen sulfide during agitation and pumping of the deep pits); F. Andriamanohiarisoamanana, et al., *Effects of Handling Parameters on Hydrogen Sulfide Emission From Stored Dairy Manure*, 154 J. ENVTL. MGMT. 110 (2015) (“H₂S concentration increased with [total solids] concentration”).

¹⁵⁵ A. Leytem, et al., *Ammonia Emissions From Dairy Lagoons In The Western U.S.*, 61 TRANSACTIONS OF THE ASABE 1001, 1006 (2018) (finding that ammonia emissions from anaerobic lagoons on industrial dairies were correlated with the amount of N in the lagoon, temperature, and wind speed, and lagoon receiving water from freestall flush dairy had highest emissions due to “greater concentrations of manure N”); K. James, *supra* note 144, at 284-86 (finding that emissions of atmospheric ammonia–nitrogen from anaerobic lagoon on industrial hog operation were greatest in the summer); A. Leytem, et al., *Greenhouse Gas & Ammonia Emissions*, *supra* note 153 (finding wastewater ponds contributed 67% of total farm ammonia emissions in the spring and summer); FAO, TACKLING CLIMATE CHANGE THROUGH LIVESTOCK, *supra* note 273, at 17, 20.

¹⁵⁶ See, e.g., EPA, *How Does Particulate Matter Affect Human Health* (Oct. 11, 2019), <https://www3.epa.gov/region1/airquality/pm-human-health.html>; *Health & Environmental Effects of Particulate Matter* (Jun. 20, 2018), <https://www.epa.gov/pm-pollution/health-and-environmental-effects-particulate-matter-pm>.

¹⁵⁷ B. Woodbury, et al., *Emission of Volatile Organic Compounds After Land Application of Cattle Manure*, 43 J. ENVTL. QUALITY 1207 (2014) (“[A]n increase in emissions of volatile sulfur compounds resulted from increased manure application.”).

“cause[]” and “contribute[] significantly to, air pollution which may reasonably be anticipated to endanger public health or welfare.”¹⁵⁸

i. Significant Contribution Finding

Contribution to Total U.S. Methane Emissions

Methane emissions from confined hog and dairy production and liquefied manure management system significantly contribute to elevated concentrations of GHGs in the atmosphere. According to EPA’s most recent GHG inventory, which is based on EPA’s methodologies for calculating non-carbon GHG emissions on a 100-year time horizon, methane emissions from these source categories account for 33 percent of total U.S. methane emissions from agricultural activities, and 13 percent of total U.S. methane emissions.¹⁵⁹ Moreover, on a CO₂-equivalent basis, methane emissions from industrial hog and dairy operations increase by 196 to 236 percent when the time horizon for methane’s global warming potential is adjusted to 20 years.¹⁶⁰

Contribution to Total U.S. GHG Emissions

In 2009, EPA found that GHG emissions from sources covered under section 202(a) of the Clean Air Act (e.g., passenger cars, light-duty trucks, motorcycles, buses, and heavy- and medium-duty trucks) contribute to air pollution that endangers public health and welfare by accounting for 23 percent of total U.S. GHG emissions.¹⁶¹ In 2016, EPA found that GHG emissions from aircraft engines satisfy the endangerment standard because they contributed to 10 percent of total U.S. transportation GHG emissions, and 2.8 percent of total U.S. GHG emissions.¹⁶² In comparison, according to EPA’s methodologies for estimating methane emissions based on a 100-year global warming potential, industrial dairy and hog operations account for 13 percent of total U.S. agricultural GHG emissions, and 1.3 percent of total U.S. GHG emissions.¹⁶³ Because methane is one of the few greenhouse gases with a greater short-term global warming potential, the relative contribution of these source categories to overall GHG emissions increases if the time horizon is adjusted to 20 years. Thus, although methane emissions from industrial hog and dairy operations contribute to rising GHG concentrations and have a significantly greater impact on total U.S. agricultural GHG emissions than regulated sources in the other industries, EPA has thus far refused to find that GHG emissions from industrial hog and dairy operations satisfy the endangerment standard.

¹⁵⁸ 42 U.S.C. § 7411(b)(1)(A).

¹⁵⁹ See *supra* Part IV.D.

¹⁶⁰ See EPA, U.S. GHG INVENTORY, *supra* note 50, at A-503 (“While [EPA’s GHG] Inventory uses agreed-upon GWP values according to the specific reporting requirements of the UNFCCC, . . . users of the Inventory can apply different metrics and different time horizons to compare the impacts of different greenhouse gases.”).

¹⁶¹ 2009 GHG Endangerment Finding, *supra* note 31, at 66,499 & 66,540.

¹⁶² 2016 GHG Endangerment Finding, *supra* note 31, at 54,461; 54,465-66; 54,472 (also noting that GHG emissions from covered aircraft engines comprises 89 percent of total U.S. aircraft GHG emissions).

¹⁶³ See *supra* Part IV.D.

Unless EPA promulgates standards to reduce these emissions, methane emissions will continue to pose significant near-term climate threats.¹⁶⁴ As corporate interests continue to pressure dairy and hog operations to increase herd sizes and adopt larger and more industrialized facilities for animal confinement and liquefied manure management, methane emissions from these source categories will continue to increase. Likewise, as small dairy and hog farms in the United States continue to go out of business, methane emissions from industrial dairy and hog operations will become an increasingly significant proportion of overall agricultural emissions.

Contribution to Total Social Costs of Methane

Furthermore, while we recognize that a source category's percentage contribution to an industry's (or the whole economy's) GHG emissions may in some cases provide useful information about that source's significance to dangerous air pollution, it is not necessarily the only relevant data point. Another useful metric is the Interagency Working Group's (IWG) social cost of methane, which was recently reinstated by the Biden Administration and updated to reflect 2020 dollars. According to that metric, in 2020, the social cost of one metric ton of methane ranges from \$670 to \$3,900 in terms of climate damages. *See Interagency Working Group on Social Cost of Greenhouse Gases, Technical Support Document: Social Cost of Carbon, Methane, and Nitrous Oxide, Interim Estimates under Executive Order 13990* (Feb. 2021), Table ES-2. In 2030, this figure rises to \$940 to \$5,200 per metric ton. *Id.* Given the estimates in Table 4, *supra*, industrial dairy and hog operations contributed 3.344 million metric tons in CH₄ emissions in the most recently recorded year using the 100-year global warming potential of 25. Those emissions would impose social costs of \$2.24 to \$13.04 billion. In 2030, these costs increase to a range between \$3.14 and \$17.39 billion. From any conceivable viewpoint, this reflects a significant contribution to climate change. The actual costs are likely higher, since, as noted above, the inventory likely underestimates these sources' methane emissions by a large margin. Furthermore, the IWG's metrics, which are currently being updated, represent merely a floor as to the true costs that greenhouse gases impose on society, which are almost surely significantly higher than the values that the IWG has produced thus far. For this reason as well, these figures likely underreport the true harm that industrial dairy and hog operations impose on society.

According to EPA, methane is a particularly harmful and potent greenhouse gas because it has a greater global warming potential than CO₂.¹⁶⁵ Methane also has a greater short-term impact on climate change than longer-lived GHGs, such as CO₂. Therefore, methane emissions from industrial dairy and hog operations significantly contribute to climate change by (1) constituting a large fraction of total U.S. methane emissions; (2) imposing huge absolute social costs through climate damages, even regardless of their percentage of total emissions; (3) increasing overall GHG emissions, and (4) trapping heat more effectively than other GHGs, especially in the near-term 20-year period. As such, even if EPA interpreted section 111 to require the agency "to make a pollutant-specific [significant contribution finding] for GHG

¹⁶⁴ *See supra* note Part IV.D.2.

¹⁶⁵ Although industrial dairy and hog operations emit other greenhouse gases and air pollutants, such as carbon dioxide (CO₂), EPA can make a pollutant-specific endangerment finding, as well as a significant contribution finding, with respect to methane emissions from these operations.

emissions from [each] source category as a prerequisite to regulat[e] those emissions,”¹⁶⁶ methane emissions from confined hog and dairy production and liquefied manure management facilities still easily satisfy the significant contribution standard.¹⁶⁷

ii. *Endangerment Finding*

Under section 111, the Administrator has discretion to make the initial endangerment determination. However, as the U.S. Supreme Court explained in *Massachusetts v. EPA*, the word “judgment” does not give the Administrator “a roving license to ignore the statutory text,” but rather “a direction to exercise discretion within defined statutory limits.” 549 U.S. 497, 533 (2007).

Methane emissions from confined hog and dairy production and liquefied manure management facilities endanger public health and welfare by significantly contributing to elevated greenhouse gas concentrations and rising temperatures. EPA has repeatedly found that greenhouse gases, including methane, “endanger both the public health and the public welfare of current and future generations by causing or contributing to climate change,”¹⁶⁸ and recent scientific assessments confirm that climate change continues to threaten public health and welfare. Thus, methane emissions from confined hog and dairy production and liquefied manure management facilities also satisfy the requisite endangerment standard.

Further, these facts and scientific assessments support a pollutant-specific endangerment finding. Because EPA has recognized that methane is a particularly potent GHG with a high 20-year global warming potential, and considerable short-term impacts on climate change, methane emissions from fully confined hog and dairy production and liquefied manure management facilities pose significant and immediate threats to public health and welfare.

a. *“Public Health” Impacts*

The Clean Air Act requires EPA to consider the “public health” impacts of methane pollution.¹⁶⁹ Although the Act does not expressly define the term “public health,” the legislative history demonstrates that Congress intended EPA to interpret this term broadly.¹⁷⁰ Congress also intended EPA to consider the adverse health impacts on “average healthy individuals,” as well as “sensitive citizens,” such as “children” and “people with . . . conditions rendering them

¹⁶⁶ 2019 Proposed Oil & Natural Gas Rulemaking, *supra* note 32, at 50261 (soliciting comments on pollutant-specific significant contribution finding for methane emission standards from new sources in the oil and gas sector). We dispute this interpretation and expect the Biden Administration to disavow it.

¹⁶⁷ EPA’s recent rulemaking to exempt certain source categories from listing under section 111 has been vacated. *See* Pollutant-Specific Significant Contribution Finding for Greenhouse Gas Emissions From New, Modified, and Reconstructed EGUs, and Process for Determining Significance of Other New Source Performance Standards Source Categories, 86 Fed. Reg. 2542 (Jan. 13, 2021); *California v. EPA*, Order Granting Motion for Voluntary Vacatur and Remand, No. 21-1035 (April 5, 2021).

¹⁶⁸ 2009 GHG Endangerment Finding, *supra* note 31.

¹⁶⁹ 42 U.S.C. § 7411(b)(1)(A).

¹⁷⁰ *See American Lung Ass’n v. EPA*, 134 F.3d 388, 388-89 (D.C. Cir. 1998) (finding that “Congress defined public health broadly”).

particularly vulnerable to air pollution.”¹⁷¹ Therefore, EPA must evaluate a range of potential health impacts, including the threats to vulnerable groups.

Because methane is a potent and abundant greenhouse gas, methane emissions from confined dairies and hog production and liquefied manure management source categories “contribute[] significantly” to the serious health problems associated with rising global temperatures and sea levels. In prior rulemakings under section 111, EPA has found that “[c]limate change caused by manmade emissions of GHGs threatens the health of Americans in multiple ways.”¹⁷² For example, “climate change increases the likelihood of heat waves, which are associated with increased deaths and illnesses,” and it exacerbates health problems in vulnerable populations, such as “[c]hildren, the elderly, and the poor.”¹⁷³

Recent assessments demonstrate that climate change continues to endanger public health by threatening to increase mortality, injury, and illness, and worsen existing health problems. For example, climate change is associated with increased heat waves, which cause a range of serious health complications, including kidney failure, blood poisoning, and death.¹⁷⁴ Other human health threats include increased spread of deadly infectious diseases, such as the West Nile and Zika viruses; heightened exposure to foodborne, airborne, and waterborne diseases; and the emergence of new diseases.¹⁷⁵ In addition, climate change is very likely to increase physical injuries and death from wildfires and other extreme weather events.¹⁷⁶

Moreover, climate change will also exacerbate existing health vulnerabilities among at-risk populations, including children, elderly people, pregnant women, and people with chronic illnesses.¹⁷⁷ Relatedly, the health impacts of climate change will disproportionately affect low-income communities and communities of color due to their increased exposure and sensitivity to health hazards.¹⁷⁸ Undernutrition and other health problems will also increase in rural and underserved areas.¹⁷⁹ By increasing heat waves and other extreme and dangerous weather

¹⁷¹ *Id.*

¹⁷² 2016 Oil & Natural Gas Rulemaking, *supra* note 32, at 35,833 (summarizing adverse public health effects identified in 2009 GHG Endangerment Finding, *supra* note 31).

¹⁷³ *Id.*

¹⁷⁴ C. Mora, et al., *Twenty-Seven Ways a Heat Wave Can Kill You: Deadly Heat in the Era of Climate Change*, 10 CIRCULATION: CARDIOVASCULAR QUALITY & OUTCOMES (Nov. 2017).

¹⁷⁵ USGCRP, NCA4 REPORT, *supra* note 45, at 544–46, 1217; IPCC, AR5 REPORT, *supra* note 42, at 69.

¹⁷⁶ USGCRP, NCA4 REPORT, *supra* note 45, at 1217; IPCC, AR5 REPORT, *supra* note 42, at 69.

¹⁷⁷ See, e.g., IPCC, AR5 REPORT, *supra* note 42, at 15, 69 (noting that climate change will lead to more illness, “especially in developing countries with low income”); see also HARVARD HEALTH PUBLISHING, HEAT STROKE (Jan. 2019) (explaining that nonexertional heat strokes are more likely “to occur in people who have diminished ability to regulate body temperatures, such as older people, very young children or people with chronic illnesses”), https://www.health.harvard.edu/a_to_z/heat-stroke-hyperthermia-a-to-z.

¹⁷⁸ USGCRP, NCA4 REPORT, *supra* note 45, at 546–48.

¹⁷⁹ IPCC, AR5 REPORT, *supra* note 42, at 69.

conditions, climate change will also adversely affect the health of farm workers and other agricultural workers who work outside.¹⁸⁰

Thus, because recent assessments confirm that climate change continues to pose serious acute and chronic health threats, EPA must find that methane emissions from industrial dairy and hog operations significantly endanger public health.

b. *“Welfare” Impacts*

EPA must also find that methane pollution affects public “welfare,” which the Act defines exceptionally broadly:

All language referring to effects on welfare includes, but is not limited to, [1] effects on soils, water, crops, vegetation, man-made materials, animals, wildlife, weather, visibility, and climate, damage to and deterioration of property, and hazards to transportation, as well as [2] effects on economic values and on personal comfort and well-being, whether caused by transformation, conversion, or combination with other air pollutants.

42 U.S.C. § 7602(h). Accordingly, this sweeping definition gives EPA expansive power to regulate sources of air pollution that harm public welfare and contribute to global warming. Specifically, the Act expressly requires EPA to consider a wide range of environmental and ecological factors, as well as qualitative factors, such as “economic values,” and “personal comfort and well-being.”¹⁸¹ Further, because the Act requires EPA to consider any potential effects “caused by transformation, conversion, or combination with other air pollutants,” EPA must evaluate the effects associated with climate change—the combined effect of methane and other well-mixed greenhouse gases.

Disproportionate Impacts

Climate change disproportionately affects Black, Indigenous and other communities of color, low-income communities, and other vulnerable populations. Because these communities are more likely to be located in isolated rural areas, floodplains, coastlines, and other at-risk locations, they have increased risk of exposure to adverse climate change impacts.¹⁸² Moreover, these communities have disproportionately high rates of pollution and other socioeconomic stressors, which increases their risk of exposure, as well as their vulnerability to climate change impacts.¹⁸³ For example, Black and Latino communities have higher rates of underlying health conditions and poverty, which increases their sensitivity to heat waves, foodborne illnesses,

¹⁸⁰ *Id.* at 15 (explaining how climate change will “compromise common human activities, including growing food and working outdoors”).

¹⁸¹ 42 U.S.C. § 7602(h).

¹⁸² USGCRP, IMPACTS OF CLIMATE CHANGE ON HUMAN HEALTH IN THE UNITED STATES 249 (2016); CALIFORNIA’S FOURTH CLIMATE CHANGE ASSESSMENT, CLIMATE JUSTICE SUMMARY REPORT 36-48 (2018).

¹⁸³ USGRP, IMPACTS OF CLIMATE CHANGE, *supra* note 182, at 252.

infectious diseases, air pollution, and other climate change impacts.¹⁸⁴ Further, for immigrant and low-income populations in rural farming communities, drought and other climate-related impacts threaten to worsen existing vulnerabilities, such as water scarcity, unemployment, and food insecurity.¹⁸⁵

In addition to heightening exposure and vulnerability to climate-related impacts, these communities face social, political, and economic barriers, which impede their ability to respond and adapt to climate change. For example, communities with limited social capital or poorly maintained infrastructure have greater difficulty preparing and responding to natural disasters, disease outbreaks, and other climate change impacts.¹⁸⁶ These communities also face economic barriers to adaptive capacity, such as lack of financial capital for mitigation strategies or technologies.¹⁸⁷ Further, linguistically and geographically isolated populations or people with undocumented residency status are particularly vulnerable because they are less likely to receive the information and resources they need to respond to extreme weather events, public health impacts, and persistent climate change impacts, such as displacement.¹⁸⁸

Environmental & Ecological Impacts

Climate change has already had several environmental and ecological impacts, including “effects on soils, water, crops, vegetation, man-made materials, animals, wildlife, weather, visibility.”¹⁸⁹ For example, well-documented ecological impacts include increasing atmospheric and oceanic temperatures, melting glaciers, rising sea levels, and ocean acidification.¹⁹⁰

These changes have also had widespread impacts on natural systems. Changing precipitation patterns and melting snow has adversely affected hydrological systems, resulting in coastal erosion, damage to water and sanitation systems, and decreased water availability.¹⁹¹ In recent decades, global warming has already caused “widespread shrinking of the cryosphere,”

¹⁸⁴ See S. CARRATALA & C. MAXWELL, CTR. FOR AMERICAN PROGRESS, HEALTH DISPARITIES BY RACE & ETHNICITY (2020); see, e.g., K. Shaw, et al., *Presence of Animal Feeding Operations & Community Socioeconomic Factors Impact Salmonellosis Incidence Rates: An Ecological Analysis Using Data From The Foodborne Diseases Active Surveillance Network, 2004–2010*, 150 ENVTL. RES. 166 (2016) (increased rates of *Salmonella* illness were linked to communities with CAFOs, higher percentages of African American populations, and higher poverty rates).

¹⁸⁵ See, e.g., C. Greene, *Broadening Understandings of Drought: The Climate Vulnerability of Farmworkers & Rural Communities in California*, 89 ENVTL. SCI. & POLICY 283 (2018).

¹⁸⁶ USGRP, IMPACTS OF CLIMATE CHANGE, *supra* note 182, at 252; see, e.g., A. Chriest, et al., *The Role of Community Social Capital for Food Security Following an Extreme Weather Event*, 64 J. RURAL STUDIES 80 (2018) (rural communities with high social capital have greater capacity to respond to food insecurity after extreme weather events).

¹⁸⁷ See, e.g., M. Hayden, et al., *Adaptive Capacity to Extreme Heat: Results From a Household Survey in Houston, Texas*, 9 WEATHER, CLIMATE, & SOCIETY 787 (2017) (finding that most people suffering heat-related symptoms at home during heat wave could not afford to use air conditioning because of the high cost of electricity).

¹⁸⁸ See, e.g., E. Fussell, et al., *Implications of Social & Legal Status on Immigrants’ Health in Disaster Zones*, 108 AMERICAN J. PUBLIC HEALTH 1617 (2018).

¹⁸⁹ *Id.*

¹⁹⁰ USGCRP, NCA4 REPORT, *supra* note 45, at 37, 39.

¹⁹¹ IPCC, AR5 REPORT, *supra* note 42, at 6.

with thinning ice sheets and glaciers, declining snow cover, and increasing permafrost temperatures.¹⁹² Likewise, climate change has caused many terrestrial and aquatic species to change their migratory, feeding, and reproductive behaviors.¹⁹³ A significant portion of plant and animal species are also at a greater risk of extinction due to climate change.¹⁹⁴

Weather-related impacts have also been considerable. In recent years, there has been a well-documented increase in extreme temperature and precipitation variation and heat waves.¹⁹⁵ In addition, weather-related changes have already had widespread effects on natural systems, including droughts, floods, wildfires, tornadoes, and severe storms.¹⁹⁶ As anthropogenic GHG emissions continue to rise, extreme weather-related events, such as heat waves and heavy precipitation events, are “virtually certain” to become more frequent and intense.¹⁹⁷ Climate change is also likely to cause larger and more destructive wildfires in the United States,¹⁹⁸ as well as “chronic, long-duration hydrological drought.”¹⁹⁹

Further, climate change will decrease productivity of irrigated agriculture and livestock. Declining winter snowmelt runoff will reduce water availability for crop irrigation,²⁰⁰ and the release of mercury and other contaminants stored in glaciers and permafrost will reduce water quality.²⁰¹ Relatedly, declining snow cover will directly affect soil moisture, resulting in drier soil and lower agricultural yields.²⁰² Climate change will also reduce agricultural yields by changing growing seasons, increasing extreme precipitation events (e.g., dry spells, heavy rainfalls), and increasing animal diseases and pest infestations.²⁰³ Thus, as food demand increases, food and water availability will become an increasingly important issue.²⁰⁴

Property Impacts

EPA should also consider the various ways in which climate change will “damage . . . and deteriorat[e] . . . property.”²⁰⁵ Extreme weather events, such as wildfires,

¹⁹² IPCC, SPECIAL REPORT ON THE OCEAN & CRYOSPHERE IN A CHANGING CLIMATE 1–6 (2019) [hereinafter OCEAN REPORT].

¹⁹³ IPCC, AR5 REPORT, *supra* note 42, at 6.

¹⁹⁴ *Id.* at 13.

¹⁹⁵ *Id.* at 7–8.

¹⁹⁶ *Id.*

¹⁹⁷ *Id.* at 10.

¹⁹⁸ USGCRP, NCA4 REPORT, *supra* note 45, at 240–41.

¹⁹⁹ *Id.* at 159.

²⁰⁰ IPCC, OCEAN REPORT, *supra* note 192, at 154–55, 163.

²⁰¹ *Id.* at 153; *see also id.* at 511–13 (explaining how climate change threatens human health by increasing the amount of mercury and other contaminants in marine organisms).

²⁰² *Id.* at 154, 165.

²⁰³ IPCC, AR5 REPORT, *supra* note 42, at 6, 13; USGCRP, NCA4 REPORT, *supra* note 45, at 401.

²⁰⁴ IPCC, AR5 REPORT, *supra* note 42, at 13.

²⁰⁵ 42 U.S.C. § 7602(h).

floods, and hurricanes, will cause significant property damage, and repairing or replacing this damage will cost hundreds of millions of dollars each year.²⁰⁶ Likewise, sea level rise poses serious threats to coastal property and public infrastructure, such as international airports and interstate highways.²⁰⁷ Climate change is also likely to have significant impacts on energy systems and infrastructure, resulting in disrupted access to communication, transportation, electricity, medical care, and other critical resources.²⁰⁸

With respect to agricultural infrastructure, extreme temperature variation or seasonal change will make liquefied manure storage systems more prone to erosion, breakage, and wall collapse.²⁰⁹ Similarly, extreme precipitation events (e.g., heavy rains or hurricanes) cause liquefied manure storage and runoff systems to overflow and spill large amounts of waste onto nearby agricultural lands, waterways, and residential properties,²¹⁰ which can lead to serious environmental and public health consequences, such as groundwater contamination, soil degradation, and crop destruction.²¹¹

Transportation Impacts

Likewise, climate change poses several “hazards to transportation.”²¹² Weather-related impacts, such as heat waves, power outages, flooding, and heavy precipitation, adversely affect the efficiency, reliability, and safety of interconnected transportation systems.²¹³ These impacts also delay completion of modernization and expansion projects, which further undermines the system’s overall performance.²¹⁴ Further, extreme weather events will put a significant strain on transportation infrastructure and assets.²¹⁵ Thus, as these events become more frequent and destructive, maintenance and replacement costs will also increase.²¹⁶

Moreover, the transportation impacts of climate change will disproportionately affect low-income people, elderly people, people with limited English proficiency, and other vulnerable populations.²¹⁷ Disrupted access to transportation systems will also disproportionately harm rural communities with limited infrastructure, resources, and political influence.²¹⁸ For example,

²⁰⁶ USGCRP, NCA4 REPORT, *supra* note 45, at 1220; *see also id.* at 240–41 (discussing “the high cost of protecting property [from wildfires] in the wildland-urban interface”).

²⁰⁷ *Id.* at 1118–19.

²⁰⁸ *Id.* at 652–53.

²⁰⁹ *See supra* note 78.

²¹⁰ *See supra* note 79.

²¹¹ For further discussion on the impacts of manure overapplication, *see* Part V.B.2.i.

²¹² 42 U.S.C. § 7602(h).

²¹³ USGCRP, NCA4 REPORT, *supra* note 45, at 486–90.

²¹⁴ *Id.* at 484.

²¹⁵ *Id.* at 486–90.

²¹⁶ *Id.*

²¹⁷ *Id.* at 490–91.

²¹⁸ *Id.* at 409.

disrupted transportation channels can prevent people in these communities from obtaining food, water, or medical supplies; evacuating a dangerous area; or obtaining emergency assistance. Consequently, climate change will not only make it more difficult for these communities to prepare for extreme weather events, but it will also make it more difficult for them to recover from them.

Economic Impacts

Climate change is a major threat to “economic values” on an individual level, as well as a community, state, regional, and national level.²¹⁹ For example, climate change will likely increase food and energy costs and alter purchasing behaviors.²²⁰ Rising temperatures will also slow economic growth and prolong poverty traps, especially in “urban areas and emerging hotspots of hunger.”²²¹ Rural communities are particularly vulnerable, as climate change will make it difficult for linguistically and spatially isolated areas to access jobs, food, water, and other essential resources and sectors.²²² Similarly, climate change will have significant impacts on development in coastal communities and other areas prone to extreme weather events.²²³

Likewise, recent assessments confirm that climate change will adversely affect the entire U.S. agricultural sector,²²⁴ as well as the rural communities that depend on the agricultural sector for jobs and tax revenue.²²⁵ Most notably, increased precipitation and temperature extremes will have widespread impacts on food production, including reduced crop yield, decreased water availability and supply, increased pest pressure, and decreased soil quality.²²⁶ In addition, climate change will adversely affect agricultural productivity by increasing health risks for workers, and “compromis[ing] common human activities, including growing food and working outdoors.”²²⁷

Extreme weather events will also negatively affect livestock health and animal agricultural productivity.²²⁸ Rising global temperatures will reduce industrial dairy and hog production because heat stress has the greatest effect on animals held in confinement facilities.²²⁹

²¹⁹ 42 U.S.C. § 7602(h).

²²⁰ USGCRP, NCA4 REPORT, *supra* note 45, at 447, 452.

²²¹ IPCC, AR5 REPORT, *supra* note 42, at 15.

²²² *Id.*; see also USGCRP, NCA4 REPORT, *supra* note 45, at 392.

²²³ USGCRP, NCA4 REPORT, *supra* note 45, at 1118–19; see also IPCC, OCEAN REPORT, *supra* note 192, at 75 (noting that people in polar, mountain, and coast environments regions “face the greatest exposure to ocean and cryosphere change, and poor and marginalized people here are particularly vulnerable to climate-related hazards and risks”).

²²⁴ IPCC, CLIMATE CHANGE & LAND, *supra* note 42, at 5-121 (explaining how climate change negatively affects food production, distribution, and utilization).

²²⁵ *Id.* at 4-53 to -56 (discussing links between poverty, land degradation, and climate change).

²²⁶ USGCRP, NCA4 REPORT, *supra* note 45, at 406–08, IPCC, AR5 REPORT, *supra* note 42, at 69.

²²⁷ IPCC, AR5 REPORT, *supra* note, at 42.

²²⁸ USGCRP, NCA4 REPORT, *supra* note 45, at 406–08.

²²⁹ J. Derner, et al., *Vulnerability of Grazing & Confined Livestock in the Northern Great Plains to Projected Mid- & Late-Twenty-First Century Climate*, 146 CLIMATIC CHANGE 19 (2018).

According to a recent study, heat stress from climate change alone already decreases U.S. dairy production by 1.9 percent each year, resulting in \$670 million in annual production losses, and likely reaching \$2.2 billion by the end of the century.²³⁰ Further, climate-related impacts will increase feed costs, disease, and other threats to U.S. animal production.²³¹ For example, three years of drought in Texas and California caused more than \$10 billion in direct agricultural losses, including increased feed costs.²³²

Climate change will directly affect food utilization.²³³ Specifically, rising temperatures will increase the spread of waterborne and foodborne diseases, and decrease effectiveness of transportation and distribution infrastructure,²³⁴ making it more difficult for safe and uncontaminated food products to reach consumers before spoiling. Consequently, climate change will not only intensify competition for soil and water resources, but it will decrease food availability and overall agricultural incomes.²³⁵

On a national scale, climate change is also “virtually certain” to have widespread effects on the U.S. economy and trade, from supply chains to transportation and access to global markets.²³⁶ Relatedly, climate change will negatively affect the “income and purchasing” power of low-income consumers.²³⁷

Personal Comfort & Well-Being Impacts

In addition, climate change poses several threats to “personal comfort and well-being” and overall quality of life. 42 U.S.C. § 7602(h). For example, climate threats include loss of cultural and traditional lifestyles and traditions, and “the accompanying mental health or social disruption effects” of such loss.²³⁸ As recent studies demonstrate, climate change will have serious mental health impacts, such as increased rates of anxiety, stress-related disorders,

²³⁰ G. Mauger, et al., *Impacts of Climate Change on Milk Production in the United States*, 67 PROFESSIONAL GEOGRAPHER 121 (2015). This study only estimated direct losses from heat stress.

²³¹ See A. Leister, et al., *Dynamic Effects of Drought on U.S. Crop & Livestock Sectors*, 47 J. AGRIC. & APPLIED ECONOMICS 261 (2015); A. Anyamba, et al., *Recent Weather Extremes & Impacts on Agricultural Production & Vector-Borne Disease Outbreak Patterns*, 9 PLoS ONE e92538 (2014).

²³² See D. Anderson, et al., *Agricultural Impacts of Texas’s Driest Year on Record*, 27 CHOICES 1 (2012) (noting that in 2011, drought caused \$7.62 billion in direct financial losses to agriculture, including \$3.23 billion in livestock losses (e.g., increased cost of feed)); J. Lund, et al., *Lessons From California’s 2012–2016 Drought*, 144 J. WATER RES. PLANNING & MGMT. 04018067 (2018) (noting that in 2014–2016, drought caused approximately \$3.8 billion in total direct statewide economic losses to agriculture, including lost revenue from dairy and livestock production).

²³³ IPCC, CLIMATE CHANGE & LAND, *supra* note 42, at 5–39 to –40, 5–121 (describing how climate change will increase mycotoxins in food and livestock feed).

²³⁴ IPCC, AR5 REPORT, *supra* note 42, at 69.

²³⁵ *Id.*

²³⁶ USGCRP, NCA4 REPORT, *supra* note 45, at 620–21.

²³⁷ IPCC, CLIMATE CHANGE & LAND, *supra* note 42, at 5–121.

²³⁸ USGCRP, NCA4 REPORT, *supra* note 45, at 1217.

depression, and suicide.²³⁹ These impacts will likely disproportionately affect residents of rural communities due to lack of access mental health services.²⁴⁰

Climate change will also have serious socioeconomic and political impacts on a regional, national, and global scale. For example, climate change will perpetuate existing social and economic injustices by making it more difficult for members of low-income communities to escape poverty.²⁴¹ Climate change will also reduce quality of life in urban areas by disrupting access to social networks and systems, economic opportunities, education, nature, recreation, and culture.²⁴² Moreover, extreme weather events and land degradation will increase displacement of people, which will likely lead to heightened risk of racial and social tension, as well as violent conflict.²⁴³ Further, experts predict that climate change will increase conflict and competition for resources in agricultural communities, as water resources and productive land become scarcer.²⁴⁴

In sum, climate change continues to pose serious threats to public health and welfare. Accordingly, because methane emissions from industrial dairy and hog operations significantly contribute to climate change, EPA must list these source categories under section 111.

B. EPA must reconsider its final action that decided not to determine whether to list industrial hog and dairy operations as source categories of methane under section 111.

“Under the clear terms of the Clean Air Act, EPA can avoid taking further action only if it determines that greenhouse gases do not contribute to climate change or *if it provides some reasonable explanation as to why it cannot or will not exercise its discretion to determine whether they do.*” *Massachusetts v. EPA*, 549 U.S. at 533 (emphasis added). Accordingly, EPA must “adequately explain[] the facts and policy concerns it relied on and . . . those facts [must] have some basis in the record.” *WildEarth Guardians v. EPA*, 751 F.3d 649, 653 (D.C. Cir. 2014) (citations omitted). Courts will overturn EPA’s decision not to initiate a rulemaking if there is a “fundamental change in the factual premises previously considered by the agency” or other “compelling cause.” *Id.* Thus, because EPA can effectively determine that methane emissions from industrial hog and dairy operations contribute to rising GHG emissions and climate change impacts, and promulgate standards to reduce these emissions based on currently

²³⁹ See M. Burke, et al., *Higher Temperatures Increase Suicide Rates in the United States & Mexico*, 8 NATURE CLIMATE CHANGE 723 (2018).

²⁴⁰ See, e.g., Claire Hettinger & Pam Dempsey, *Seeking a Cure: Mental Health Access Scarce in Rural, Farming Communities*, MIDWEST CTR. FOR INVESTIGATIVE REPORTING (Feb. 14, 2020), <https://investigatamidwest.org/2020/02/14/seeking-a-cure-mental-health-access-scarce-in-rural-farming-communities>.

²⁴¹ IPCC, AR5 REPORT, *supra* note 42, at 15.

²⁴² USGCRP, NCA4 REPORT, *supra* note 45, at 447.

²⁴³ IPCC, AR5 REPORT, *supra* note 42, at 16; CLIMATE CHANGE & LAND, *supra* note 42, at 4-57 to -58 (explaining how displacement due to land degradation and lost livelihoods will lead to conflict and violence); OCEAN REPORT, *supra* note 126, at 172-73 (explaining how reduced water supply will undermine agricultural and pastoral livelihoods, and lead to more labor migration and displacement).

²⁴⁴ IPCC, CLIMATE CHANGE & LAND, *supra* note 42, at 5-120 (discussing how climate change will increase “resource competition” and conflict in “agriculture-dependent communities”).

available data and methodologies, EPA has no reasonable explanation for refusing to make an endangerment finding, as sought in this petition.

1. EPA is not currently developing emission estimation methodologies for methane.

In December 2017, EPA took final action and declined to determine whether to list CAFOs as a source category under section 111 because the agency claimed to need more time to “develop[] accurate methodologies to estimate air emissions from CAFOs.”²⁴⁵ EPA claimed that it “has been undertaking [the National Air Emissions Monitoring Study (NAEMS)]” “[t]o better understand and evaluate emissions from CAFOs,”²⁴⁶ and the agency is “unable to provide emission-estimating methodologies for use with [farm emission reports] until [NAEMS] is complete.”²⁴⁷ However, NAEMS was a two-year monitoring study that collected data on “emissions of particulate matter, ammonia, hydrogen sulfide, and volatile organic compounds” from hog, dairy, and poultry confinement structures and manure storage units.²⁴⁸ It did not collect data on methane emissions. Moreover, in EPA’s denial letter, the agency expressly admitted that it was only “develop[ing] methodologies to estimate emissions of ammonia, hydrogen sulfide, PM and VOC”—not methane.²⁴⁹ Thus, EPA is not addressing emission estimation methodologies for methane through NAEMS,²⁵⁰ and EPA has no plans to develop such methodologies (because, as described below, they already exist).²⁵¹ Accordingly, EPA’s prior excuse does not apply to the present petition, and EPA should thus grant this petition.

EPA cannot refuse to carry out the objectives of section 111 with respect to one pollutant (methane) while it develops methodologies for other pollutants (particulate matter, ammonia, hydrogen sulfide, and volatile organic compounds).²⁵² In *Massachusetts*, the Supreme Court overturned EPA’s denial of a petition to regulate carbon dioxide emissions from new vehicles because the agency’s reasons “ha[d] nothing to do with whether greenhouse gas emissions

²⁴⁵ Letter from E. Scott Pruitt, *supra* note 37, at 5.

²⁴⁶ *Id.* at 10.

²⁴⁷ *Id.* at 7–8.

²⁴⁸ EPA, *National Air Emissions Monitoring Study* (last accessed Nov. 15, 2019), <https://www.epa.gov/afos-air/national-air-emissions-monitoring-study>; *see also* OFF. OF INSPECTOR GENERAL, REP. NO. 17-P-0396, ELEVEN YEARS AFTER AGREEMENT, EPA HAS NOT DEVELOPED RELIABLE EMISSION ESTIMATION METHODS TO DETERMINE WHETHER ANIMAL FEEDING OPERATIONS COMPLY WITH CLEAN AIR ACT & OTHER STATUTES 7 (Sep. 19, 2017) [hereinafter 2017 NAEMS REVIEW]; Animal Feeding Operations Consent Agreement & Final Order, 70 Fed. Reg. 4958, 4971–72 (Jan. 31, 2005) (enumerating the targeted emissions and measurement methodologies).

²⁴⁹ Letter from E. Scott Pruitt, *supra* note 37, at 8.

²⁵⁰ *Id.* at 7.

²⁵¹ In May 2019, Petitioner Environmental Integrity Project (EIP) submitted a FOIA request for agency records relating to EPA’s efforts to complete NAEMS and comply with the 2017 NAEMS REVIEW, *supra* note 248. *See* Letter from Abel Russ, Senior Attorney, EIP, to EPA (May 21, 2019). As EPA’s released records reveal, EPA has not yet finalized any methodologies and continues to unduly delay development of emission estimation methodologies.

²⁵² EPA has not finalized emission models for any of the pollutants or emission sources monitored as part of the NAEMS. As of August 2020, the agency has only released draft emission models for ammonia, hydrogen sulfide, and particulate matter from industrial hog operations. *See* EPA, DEVELOPMENT OF EMISSIONS ESTIMATING METHODOLOGIES FOR SWINE BARNS & LAGOONS (2020).

contribute to climate change.” 549 U.S. at 533. There, EPA claimed that other federal programs were providing “an effective response to the threat of global warming,” and reducing emissions from new vehicles would result in “an inefficient, piecemeal approach” to climate change. *Id.* The Supreme Court held that EPA’s “policy judgments” do not amount to “a reasoned justification for declining to form a scientific judgment.” *Id.* at 533–34.

Nor can EPA avoid its statutory obligation by noting the uncertainty surrounding various features of climate change and concluding that it would therefore be better not to regulate at this time. If the scientific uncertainty is so profound that it precludes EPA from making a reasoned judgment as to whether greenhouse gases contribute to global warming, EPA must say so. That EPA would prefer not to regulate greenhouse gases because of some residual uncertainty. . . is irrelevant. The statutory question is whether sufficient information exists to make an endangerment finding.

Id. at 534. Thus, if EPA refuses to make an endangerment determination, the agency must provide a “reasoned explanation for its refusal to decide whether greenhouse gases cause or contribute to climate change.” *Id.* at 534.

EPA is not taking any regulatory action to reduce GHG emissions from industrial hog and dairy operations. In *WildEarth Guardians v. EPA*, the D.C. Circuit upheld EPA’s denial of a petition to list coal mines as a stationary source category under section 111 because the agency was “focusing first on promulgating standards for transportation and electricity systems,” which accounted for more than 60 percent of total U.S. GHG emissions at the time, and coal mines only accounted for 1 percent of total emissions. 751 F.3d 649, 653, 655 (D.C. Cir. 2014). The D.C. Circuit held that EPA’s reasons for denying the petition for rulemaking are entirely consistent with the agency’s duties under [section 111]” because “the statute affords agency officials discretion to prioritize sources that are the most significant threats to public health.” *Id.* Unlike *WildEarth Guardians*, however, EPA is not currently “prioritiz[ing] sectors that emit more air pollutants” or otherwise “prioritiz[ing] regulatory actions in a way that best achieves the objectives of § 7411.” *Id.* Rather, the Biden Administration has committed to taking action on climate with an emphasis on environmental justice and public health, factors this Petition demonstrates. Thus, if EPA refuses to take action to reduce GHG emissions from industrial hog and dairy operations, EPA’s discretionary decision would lack a foundation in the statutory scheme, spin untethered from congressional objectives, and warrant no deference during judicial review.²⁵³

2. Existing methane emission estimation methods are reliable.

EPA does not need to develop new methodologies for estimating methane emissions from industrial dairy and hog source categories because reliable methods already exist. As explained in the most recent U.S. GHG Inventory, EPA currently estimates methane emissions from enteric fermentation based on recommendations in the 2006 IPCC Guidelines for National Greenhouse

²⁵³ See *Utility Air Regulatory Group v. EPA*, 573 U.S. 302 (2014) (holding that “EPA lacked authority to ‘tailor’ the [Clean Air] Act’s unambiguous numerical thresholds . . . to accommodate its greenhouse-gas-inclusive interpretation of the permitting triggers”).

Gas Inventories.²⁵⁴ Specifically, EPA uses the IPCC Tier 2 methodology to estimate enteric emissions from the most significant source—dairy cows and other cattle—and the IPCC Tier 1 methodology for hogs and other livestock.²⁵⁵

EPA also has an effective method for estimating methane emissions from manure management systems. The agency first uses existing data to determine key characteristics of existing animal agriculture operations, such as herd size and type of manure management system.²⁵⁶ It does not need to collect its own data. EPA then uses IPCC defaults to calculate methane emission factors for dry systems, such as pasture-based operations, and its own methodology for liquefied manure management systems, such as lagoons, to capture seasonal temperature changes and long-term retention time.²⁵⁷

Moreover, EPA has already established methods for calculating methane emissions from industrial hog and dairy manure management systems and industrial wastewater systems in its mandatory GHG reporting requirements.²⁵⁸ Under these requirements, owners or operators of facilities that contain a liquefied manure management system that emits at least 25,000 metric tons of GHGs (methane and nitrous oxide) per year must collect emissions data, calculate methane emissions from manure management source categories, and report emissions to EPA.²⁵⁹

EPA can use these existing methods to predict how changing key characteristics of dairy and hog operations will affect methane and other air pollutant emissions. Under this approach, EPA would find that the most effective way to reduce methane emissions from industrial dairy and hog operations is to apply pasture-based practices that will reduce reliance on confinement production and liquefied manure management systems. Accordingly, there is no need to develop new or different emissions estimating methodologies, and EPA can and should make a finding that methane from industrial dairy and hog operations endangers public health and welfare.

C. EPA can significantly reduce methane emissions from industrial hog and dairy operations by setting standards based on pasture-based systems.

Because the Administrator should find that methane emissions from industrial hog and dairy operations satisfy the endangerment standard, EPA has a statutory duty under section 111(b) within one year to establish standards of performance for new and modified industrial hog and dairy sources based on application of pasture-based practices, the best system of emission reduction achievable, within one year of the endangerment finding. EPA also has a duty under section 111(d) to develop guidelines requiring states to follow the same approach for existing

²⁵⁴ EPA, U.S. GHG INVENTORY, *supra* note 50, at A-298.

²⁵⁵ *Id.* at A-312 to -319.

²⁵⁶ *Id.* at A-326 to -332.

²⁵⁷ *Id.* at A-332.

²⁵⁸ 40 C.F.R. § 98.323; *see also* Technical Support Document (Nov. 2009); *see also* Industrial Wastewater Treatment Sources (2018); Technical Support Document, 6-1 (2010).

²⁵⁹ 40 C.F.R. Part 98, Subpart JJ; *see also* EPA-430-F-09-026R, Final Rule: Mandatory Reporting of GHGs (Nov. 2009).

sources within their state. Petitioners provide this information to educate EPA and do not conflate the endangerment finding and subsequent regulatory analyses.

Once EPA makes an endangerment finding and lists a source category under section 111, EPA must establish “standards of performance” for newly constructed or modified sources in the listed category.”²⁶⁰ This duty is nondiscretionary.²⁶¹ EPA may also “distinguish among classes, types, and sizes within categories of new sources for the purpose of establishing such standards.”²⁶²

In setting a “standard of performance” for new sources,²⁶³ EPA must determine the emission reduction achievable based on the Best System of Emission Reduction (BSER) that has been “adequately demonstrated,” considering the (1) “cost of achieving such reduction”; (2) “nonair quality health and environmental impact[s]”; and (3) “energy requirements.”²⁶⁴ Under EPA’s most recent interpretation in the Affordable Clean Energy Rule, section 111 “unambiguously limits the BSER to those systems that can be put into operation at a building, structure, facility, or installation, such as “add-on controls (e.g., scrubbers) and inherently lower-emitting processes/practices/designs.”²⁶⁵ Recently, the D.C. Circuit held that Congress did not limit BSER to only those measures at the stationary source itself, vacated this interpretation and rule, and remanded the issue to EPA to interpret section 111 anew. *American Lung Ass’n v. EPA*, 985 F.3d 914 (D.C. Cir. 2021). Under the previous interpretation in the Clean Power Plan, EPA more broadly interpreted BSER to “measures that can be implemented . . . by the sources themselves,” i.e., “by actions taken by the owners or operators of the sources.”²⁶⁶ After evaluating each of these factors and determining the best system, EPA must then apply the best system to the sources to determine the “degree of emission limitation achievable.” EPA’s prior interpretation and the D.C. Circuit’s rejection of the ACE Rule both support pasture-based systems for BSER.

Moreover, EPA does not need to collect emissions data to apply the best system “adequately demonstrated” to new sources. In *Lignite Energy Council v. EPA*, the D.C. Circuit

²⁶⁰ 42 U.S.C. § 7411(b)(1)(B); *see also id.* §§ 7411(a)(2) (defining “new source” as “any stationary source, the construction or modification of which is commenced after the publication of regulations (or, if earlier, proposed regulations) prescribing a standard of performance . . . which will be applicable to such source”); § (4) (defining “modification” as “any physical change in, or change in the method of operation of, a stationary source which increases the amount of any air pollutant emitted by such source or which results in the emission of any air pollutant not previously emitted”).

²⁶¹ *See Zook v. EPA*, 611 Fed. Appx. 725 (D.C. Cir. 2015) (“[T]he Administrator’s duty to regulate [an air pollutant under section 111] is triggered by an endangerment finding that the Act entrusts to the Administrator’s sole judgment.”)

²⁶² 42 U.S.C. § 7411(b)(2), (d).

²⁶³ EPA can authorize states to implement and enforce new source performance standards within their borders. 42 U.S.C. § 7411(c)(1) (allowing EPA to delegate implementation and enforcement authority to any state that develops and submits an adequate implementation plan to EPA for approval). However, even if EPA delegates limited authority to a state, EPA can still enforce applicable standards in the state. *Id.* § (c)(2).

²⁶⁴ *Id.* § 7411(a)(1).

²⁶⁵ Repeal of the Clean Power Plan, 84 Fed. Reg. 32520, 32524 (Jul. 8, 2019).

²⁶⁶ Carbon Pollution Emission Guidelines for Existing EGUs, 60 Fed. Reg. 64661, 64720 (Dec. 22, 2015).

upheld EPA’s new source performance standard, even though the agency was unable to collect data for the application of the best system, because the “absence of data is not surprising for a new technology,” and “section 111 ‘looks toward what may fairly be projected for the regulated future, rather than the state of the art at present.’” 198 F.3d 930, 933-34 (D.C. Cir. 1999) (citations omitted). “Of course, where data are unavailable, EPA may not base its determination that a technology is adequately demonstrated or that a standard is achievable on mere speculation or conjecture, but EPA may compensate for a shortage of data through the use of other qualitative methods.” *Id.* at 934 (internal citations omitted).

In addition to developing nationally applicable standards for new and modified sources, EPA must establish guidelines for states to develop their own standards of performance for existing sources located within their respective borders.²⁶⁷ Under section 111(d), EPA has broad authority and flexibility to set emission guidelines for unregulated air pollutants,²⁶⁸ and states must follow these guidelines when developing standards for existing sources located in their jurisdiction.²⁶⁹ However, section 111(d) grants states the authority to consider a source’s remaining useful life and other factors when applying a standard of performance to the source.²⁷⁰

1. Pasture-based production is the best system of emission reduction.

Pasture-based dairy and hog production is the “best system of emissions reduction . . . [that] has been adequately demonstrated,” based on a variety of factors, including implementation costs, operation and maintenance costs, “nonair quality” health impacts, “nonair quality” environmental impacts, and energy requirements.²⁷¹ Thus, EPA should establish national standards for new and modified sources within industrial dairy and hog source categories based on the level of methane and GHG emission reductions achievable by applying pasture-based practices.

Methane Emissions Reductions

As several recent studies demonstrate, industrial hog and dairy operations can dramatically reduce methane emissions by adopting pasture-based production systems.

Enteric Emissions

Industrial dairy operations generate significant amounts of enteric methane emissions because they feed animals in a manner other than grazing with liquefied manure management systems to confine thousands of animals in specialized confinement facilities. In contrast, well-managed pasture-based dairy operations have lower enteric emissions because they stock fewer

²⁶⁷ 42 U.S.C. § 7411(d).

²⁶⁸ *Id.* For example, EPA has previously established regulations for existing sources in the form of emission guidelines that describe the BSER, the degree of emission reductions achievable, costs and environmental impacts of application, the time required to implement, and a goal for reductions based on BSER analysis. *See supra* note 32.

²⁶⁹ If any state’s plan does not comply with EPA regulations, EPA can reject the state’s plan, or develop a plan for the state.

²⁷⁰ *See* 42 U.S.C. § 7411(d).

²⁷¹ *Id.* § 7411(a)(1).

cows than industrial operations. Hog and dairy producers can thus reduce enteric emissions by (1) reducing the amount of time hogs and dairy cows spend in confinement, and (2) increasing the amount of time animals spend in well-maintained pastures or paddocks grazing and foraging.

Further, hog and dairy producers can reduce enteric emissions by maintaining pastures, paddocks, and grazing lands properly to ensure that animals have access to high-quality forage and feed. According to recent assessments, industrial dairy operations can reduce enteric methane emissions by adding high-quality forage to animal diets.²⁷² Studies also confirm that “better quality pasture and better pasture management can lead to improvements in forage digestibility and nutrient quality,” which “results in faster animal growth rates,” “increase[d] cow fertility rates, and reduce[d] mortality rates,” “thus improving animal and herd performance.”²⁷³ Likewise, “better grazing management,” which includes increased mobility and balancing of grazing and rest periods, can promote “forage production and soil carbon sequestration.”²⁷⁴ Thus, by adopting a well-managed pasture-based system, hog and dairy producers can “maintain high quality forage and reduce per-animal enteric methane emissions.”²⁷⁵

Manure Management Emissions

In addition to enteric emissions, fully confined dairy and hog production facilities generate methane from fresh manure on facility flooring. By reducing the number of cows and hogs per farm and the overall amount of manure deposited in confinement facilities, methane emissions from manure decomposing on facility flooring and in liquid manure management systems will decrease significantly. Likewise, by increasing reliance on forage feed, rather than purchased feed grown off-site, pasture-based systems significantly reduce methane emissions from spoilage and loss during transport, long-term feed storage, and handling.²⁷⁶

Moreover, fully confined dairy and hog production facilities emit significant amounts of methane from liquefied manure management systems, and these emissions increase over time.²⁷⁷

²⁷² IPCC, CLIMATE CHANGE & LAND, *supra* note 42, at 2-79; NAT’L SUSTAINABLE AGRIC. COALITION (NSAC), AGRIC. & CLIMATE CHANGE: POLICY IMPERATIVES & OPPORTUNITIES TO HELP PRODUCERS MEET THE CHALLENGE 26 (Nov. 2019) (explaining how changing the grain to forage ratio in dairy cows’ diets can significantly reduce enteric methane emissions); A. Dall-Orsoletta, et al., *Ryegrass Pasture Combined With Partial Total Mixed Ration Reduces Enteric Methane Emissions & Maintains The Performance of Dairy Cows During Mid To Late Lactation*, 99 J. DAIRY SCIENCE 4374 (2016) (finding that “inclusion of annual ryegrass pasture to the diet of [confined] dairy cows maintained animal performance and reduced enteric methane emissions”); M. Dutreuil, et al., *Feeding Strategies & Manure Management for Cost-Effective Mitigation of Greenhouse Gas Emissions From Dairy Farms in Wisconsin*, 97 J. DAIRY SCI. 5904, 5912 (2014) (finding that GHG emissions from confinement housing facilities decreased when cows on industrial dairy operations were given access to pastures); *see also* B. O’Neill, al., *Effects of a Perennial Ryegrass Diet or Total Mixed Ration Diet Offered to Spring-Calving Holstein-Friesian Dairy Cows on Methane Emissions, Dry Matter Intake, & Milk Production*, 94 J. DAIRY SCI. 1941 (2011).

²⁷³ P. GERBER, ET AL., FOOD & AGRIC. ORGANIZATION (FAO), TACKLING CLIMATE CHANGE THROUGH LIVESTOCK: A GLOBAL ASSESSMENT OF EMISSIONS & MITIGATION OPPORTUNITIES 69, 70 (2013).

²⁷⁴ *Id.* at 73.

²⁷⁵ NSAC, AGRIC. & CLIMATE CHANGE, *supra* note 272, at 25–26.

²⁷⁶ *Id.* at 26.

²⁷⁷ *See, e.g.*, M. Dutreuil, *supra* note 272, at 5912 (finding that GHG emissions from manure storage decreased when cows from industrial dairy operations were given access to pastures for part of the year).

Conversely, pasture-based systems emit significantly less methane from manure management because animals on pastures deposit manure directly on the land, and manure management is only required when animals deposit manure in temporary or partial confinement areas, such as milking stations and walkways. Thus, even if industrial hog and dairy operations can only rely on pasture-based systems during the spring or summer, when conditions allow, they can substantially reduce methane emissions from liquefied manure management.²⁷⁸

In sum, emission standards based on widespread application of well-managed pasture-based systems will significantly reduce methane emissions from fully confined dairy and hog confinement and liquefied manure management sources.

Additional GHG Emission Reductions

Nitrous Oxide & Carbon Dioxide Emissions

In addition to releasing methane, manure decomposing in liquefied storage systems can release nitrogen into the atmosphere as ammonia (NH₃), which can transform into nitrous oxide (N₂O), another potent GHG and air pollutant.²⁷⁹ Thus, pasture-based systems decrease direct methane emissions from manure management, as well as indirect nitrous oxide emissions, by decreasing the amount of manure managed with liquefied manure systems through herd size decreases and manure decomposition on pasture.²⁸⁰

Further, pasture-based systems reduce direct and indirect nitrous oxide emissions from stored manure and wastewater applied to land. When manure is stored in liquefied manure management systems, producers must eventually dispose of the waste through land applications. When producers dispose of the waste by applying the manure to feed crops as fertilizer, significant amounts of nitrous oxide is emitted from the soil.²⁸¹ Manure applied to soil that is frozen or covered in snow also generates nitrous oxide as it decomposes on the surface.²⁸² Moreover, manure applications can result in indirect nitrous oxide emissions (from leached or volatilized N), which contributes to rising GHG emissions and climate change.²⁸³ Thus, pasture-based systems can reduce nitrous oxide emissions from manure land applications.

Allowing animals to graze on pastures will decrease the need for imported feed, which will in turn reduce CO₂ and N₂O created in growing, processing, transporting, and storing grain

²⁷⁸ See, e.g., Baldé, *supra* note 98 (finding that methane emissions from long-term liquid manure storage are highest “when high manure temperature and high volume coincide[.]”).

²⁷⁹ FAO, TACKLING CLIMATE CHANGE THROUGH LIVESTOCK, *supra* note 273, at 17, 20.

²⁸⁰ See, e.g., J. Owen, et al., *supra* note 98, at 555.

²⁸¹ EPA, U.S. GHG INVENTORY, *supra* note 50, at 5-11; see also I. Shcherbak, et al., *Global Meta-Analysis of the Nonlinear Response of Soil Nitrous Oxide (N₂O) Emissions to Fertilizer Nitrogen*, 111 PNAS 9199 (2014) (finding that N₂O contributes to global climate change and ozone depletion, and N₂O emissions rise rapidly as applied N rates exceed crop needs).

²⁸² NSAC, AGRIC. & CLIMATE CHANGE, *supra* note 272, at 26.

²⁸³ See EPA, U.S. GHG INVENTORY, *supra* note 50, at 5-11.

feed for hog and dairy cows in confinement systems.²⁸⁴ Pasture-based production systems can also reduce overall GHG emissions by lowering CO₂ emissions from energy consumption.²⁸⁵ Industrial hog and dairy operations consume significant amounts of energy during animal production because they rely on highly specialized and industrialized facilities to confine large numbers of dairy cows and hogs.²⁸⁶ These operations also consume energy during manure management because they rely on highly industrialized facilities, technologies, and equipment to collect, manage, store, and monitor liquefied manure for long periods. Likewise, these operations also directly emit CO₂ during manure land application because they rely on specialized equipment for spray irrigation, soil injection, crop fertilization, and runoff monitoring. Pasture-based systems reduce indirect CO₂ emissions generated during the construction, modification, and expansion of industrialized confinement and manure management facilities.²⁸⁷

Carbon Sequestration

Pasture-based systems can reduce carbon dioxide in the atmosphere by increasing the amount of C stored in soil through improved land management practices and land restoration.²⁸⁸ For example, by replacing annual crops with deep-rooted perennial forage plants, pasture-based systems minimize soil disturbance and erosion, and maximize biomass production, resulting in

²⁸⁴ See G. Malcolm, et al., *Energy & Greenhouse Gas Analysis of Northeast US Dairy Cropping Systems*, 199 AGRIC. ECOSYSTEMS & ENVIRONMENT 407 (2015) (dairy cropping systems lowered total fossil energy inputs per Mg of milk produced by 18-15%, “largely by importing [77-71%] less feed crops that would have been grown elsewhere”); A. Fredeen, et al., *Implications of Dairy Systems on Enteric Methane & Postulated Effects on Total Greenhouse Gas Emission*, 7 ANIMAL 1875 (2013).

²⁸⁵ M. Pagani, et al., *An Assessment of the Energy Footprint of Dairy Farms in Missouri & Emilia-Romagna*, 145 AGRIC. SYS. 116 (2016) (dairy operations can reduce energy inputs by switching to forage-based farming and reducing reliance on fertilizer, feed, and fuel).

²⁸⁶ J. Tallaksen, et al., *Reducing Life Cycle Fossil Energy & Greenhouse Gas Emissions For Midwest Swine Production Systems*, 246 J. CLEANER PRODUCTION (2020) (hog production facilities use significant amounts of fossil energy for heating, cooling, and ventilation); P. Lammers, et al., *Energy Use In Pig Production: An Examination of Current Iowa Systems*, 90 J. ANIMAL SCI. 1056 (2012) (hog production facilities account for 25% of energy use on industrial hog operations); L. Murgia, et al., *A Partial Life Cycle Assessment Approach to Evaluate the Energy Intensity & Related Greenhouse Gas Emission in Dairy Farms*, 44 J. AGRIC. ENGINEERING 186, 190 (2013) (feed preparation and distribution operations require the largest amount of total fuel consumption (52%)).

²⁸⁷ See M. Koesling, et al., *Embodied & Operational Energy in Buildings on 20 Norwegian Dairy Farms: Introducing the Building Construction Approach to Agriculture*, 108 ENERGY & BUILDINGS 330 (2015). (“Choosing a design that requires less material or materials with a low amount of embodied energy, can significantly reduce the amount of embodied energy in [dairy] buildings.”).

²⁸⁸ NSAC, AGRIC. & CLIMATE CHANGE, *supra* note 272, at 9; see, e.g., P. Stanley, et al., *Impacts of Soil Carbon Sequestration on Life Cycle GHG Emissions in Midwestern USA Beef Finishing Systems*, 162 AGRIC. SYS. 249 (2018) (“[Adaptive multi-paddock] grazing can contribute to climate change mitigation through [soil organic carbon] sequestration”); A. Franzluebbers, et al., *Crop & Cattle Production Responses to Tillage & Cover Crop Management in an Integrated Crop-Livestock System in the Southeastern USA*, 57 EUROPEAN J. AGRONOMY 62 (2014).

increased soil carbon sequestration.²⁸⁹ Likewise, pasture-based systems increase soil carbon by increasing soil health and biodiversity in degraded or eroded lands.²⁹⁰ Thus, well-managed, regenerative pasture-based systems can lead to significant, long-term soil sequestration of carbon, and EPA's emission standards for industrial hog and dairy operations should reflect the amount of carbon dioxide emission reductions achievable under pasture-based systems.

Additional Emission Reductions

In addition, reducing GHG emissions from industrial hog and dairy operations will also reduce dust, odor, zoonotic pathogens, and other harmful pollutants emitted from confinement facilities and liquefied manure management systems.²⁹¹ These emissions degrade local air quality, increase odor, decrease property values, and threaten health and well-being of local residents.²⁹² Thus, allowing animals to graze on pasture-based systems will dramatically reduce odor and air pollution in rural communities. Pathogen exposure and illness in rural, agricultural communities will also decrease because fewer contaminants will enter the air during manure land disposal.²⁹³

Additional Environmental & Public Health Benefits

In addition to reducing GHG emissions, well-managed pasture-based systems provide several additional public health and welfare benefits to rural communities and farmers.²⁹⁴

²⁸⁹ NSAC, AGRIC. & CLIMATE CHANGE, *supra* note 272, at 17–21; *see, e.g.*, R. Ghimire, et al., *Long-term Management Effects & Temperature Sensitivity of Soil Organic Carbon in Grassland and Agricultural Soils*, 9 SCI. REPORTS 12151 (2019) (“Reducing tillage” and “growing perennial grasses could minimize [soil organic carbon] loss and have the potential to improve soil health and agroecosystem resilience under projected climate warming.”); W. Teague, et al., *supra* note 76 (“Incorporating forages and ruminants into regeneratively managed agroecosystems can elevate soil organic C, improve soil ecological function by minimizing the damage of tillage and inorganic fertilizers and biocides, and enhance biodiversity and wildlife habitat.”); M. Machmuller, et al., *Emerging Land Use Practices Rapidly Increase Soil Organic Matter*, 6 NATURE COMM. 6995 (2015) (pasture-based intensively grazed dairy systems can restore soil quality and mitigate climate change by increasing soil C).

²⁹⁰ *See supra* note 289.

²⁹¹ *See supra* notes 65 and 80.

²⁹² *See supra* notes 66 and 83; *see also* *McKiver v. Murphy Brown, LLC*, 980 F.3d 937 (4th Cir. 2020).

²⁹³ *See, e.g.*, R. Dungan, *supra* note 66 (finding that the risk of infection after inhaling pathogens aerosolized during irrigation of diluted dairy wastewaters were greatest in individuals closest to the operation due to “higher pathogen dose”); T. Burch, et al., *supra* note 66, at 1, 10–11 (“Reducing pathogen prevalence and concentration in source manure would most effectively mitigate [human health risks from spray irrigation of livestock manure].”).

²⁹⁴ *See, e.g.*, IPCC, CLIMATE CHANGE & LAND, *supra* note 42, at 4–61 (“There is strong scientific consensus that a combination of forestry with agricultural crops and/or livestock, agroforestry systems can provide additional ecosystem services when compared with monoculture crop systems.”); J. Guyader, et al., *Forage Use to Improve Environmental Sustainability of Ruminant Production*, 94 J. ANIMAL SCI. 3147 (2016) (“The potential environmental benefits of forage-based systems may be expanded even further [than GHG emission reductions] by considering their other ecological benefits, such as conserving biodiversity, improving soil health, enhancing water quality, and providing wildlife habitat.”).

Water Quality

When industrial hog and dairy operations apply too much manure to a small area, or when they apply manure at high rates for long periods, contaminants in the manure, such as nitrogen and phosphorus, fecal bacteria, pathogens, and antibiotic residents, accumulate in the soil and enter waterways through soil erosion and runoff.²⁹⁵ Likewise, when producers apply more manure to croplands than crops can use, the excess nitrogen can mineralize into nitrate, which is an extremely soluble form of nitrogen that can move through soil with water, potentially leaching into groundwater or surface waters.²⁹⁶ Further, nutrients, pesticides, heavy metals, and other harmful contaminants can also enter water sources from feed crops (e.g., soybean and corn). A recent analysis of groundwater impacts from industrial dairy operations in California revealed that “94 percent of groundwater nitrogen loading on dairies . . . occurs on croplands,” with “‘unaccounted-for’ manure nitrogen on many dairies.”²⁹⁷

Because liquefied manure storage systems allow manure to accumulate for long periods, these systems increase the amount of manure applied to land at one time, which increases the risk of oversaturation and runoff.²⁹⁸ In addition to improper manure disposal, including applications to saturated or frozen ground, liquefied manure management systems increase the risk of manure entering local water sources during heavy rain events, spills, and storage lagoon and equipment failures.²⁹⁹ Further, because industrial hog and dairy operations need to transport and store massive amounts of imported feed to produce animals in confinement facilities, these operations increase runoff from feed production, transportation, and storage.

As several studies demonstrate, manure runoff and discharges to surface waters have several adverse impacts on public health and ecological systems.³⁰⁰ For example, manure from

²⁹⁵ EPA, *Nutrient Pollution, The Issue* (last access Mar. 23, 2020), <https://www.epa.gov/nutrientpollution/issue>; EPA, LITERATURE REVIEW OF CONTAMINANTS IN LIVESTOCK & POULTRY MANURE & IMPLICATIONS FOR WATER QUALITY 1 (2013) (“The geographic concentration of livestock . . . can lead to concentrations of manure that may exceed the needs of the plants and the farmland where it was produced.”) [hereinafter CONTAMINANTS IN LIVESTOCK MANURE]; see also APHIS, DAIRY MGMT. PRACTICES, *supra* note 122, at 38 tbl.A.4.a (demonstrating that most large farms use spray irrigation or surface application systems, and large farms are far more likely to use subsurface injection and spray irrigation than small farms).

²⁹⁶ See, e.g., EPA, CONTAMINANTS IN LIVESTOCK MANURE, *supra* note 295, at 2 tbl.1-1 (summarizing the impacts of key pollutants from livestock operations and animal manure); FAO, SOIL POLLUTION: A HIDDEN REALITY 20–21 (2018).

²⁹⁷ CENT. VALLEY DAIRY REPRESENTATIVE MONITORING PROGRAM, SUMMARY REPRESENTATIVE MONITORING REPORT 10, 26 (Apr. 19, 2019).

²⁹⁸ See *supra* EPA, U.S. GHG INVENTORY, *supra* note 50, at A-348 tbl.A-190; S. COX, ET AL., U.S. GEOLOGICAL SURVEY, CONCENTRATIONS OF NUTRIENTS AT THE WATER TABLE BENEATH FORAGE FIELDS RECEIVING SEASONAL APPLICATIONS OF MANURE, WHATCOM COUNTY, WASHINGTON, AUTUMN 2011–SPRING 2015 (2018).

²⁹⁹ EPA, CONTAMINANTS IN LIVESTOCK MANURE, *supra* note 295, 22, 35, 72.

³⁰⁰ See CASE STUDIES ON CAFO GROUNDWATER IMPACT, *supra* note 65 (over-application of dairy lagoon effluent resulted in groundwater contamination by nitrate, as well as antibiotics, estrogens, and other stressors); S. Stackpoole, et al., *Variable Impacts of Contemporary Versus Legacy Agricultural Phosphorus On US River Water Quality*, 116 PNAS 20562 (2019); C. Long, et al., *Use of Manure Nutrients From Concentrated Animal Feeding Operations*, 44 J. GREAT LAKES RESEARCH 245 (2018) (CAFOs applied excess manure nutrients to cropland by over-estimating crop yields in calculating plant nutrient requirements in 67% of cases) .

industrial hog and dairy operations can spread harmful contaminants, such as fecal bacteria and zoonotic pathogens, to local water sources, resulting in waterborne and foodborne disease outbreaks, antibiotic-resistant infections, and other adverse community impacts.³⁰¹ Moreover, runoff from manure applications can increase concentrations of heavy metals (from supplemented animal feed), which can harm beneficial soil organisms, impair plant metabolism, and decrease crop productivity.³⁰² Because heavy metals can persist and accumulate in living organisms, these metals also threaten the health and well-being of local residents and animals.³⁰³ Further, manure applications can increase concentrations of other highly persistent pollutants, such as veterinary antibiotic residues, which can lead to antimicrobial-resistant bacteria in soils.³⁰⁴

In addition, both manure disposal and feed production degrade local water quality by increasing the amount of oxygen-depleting nutrients in the environment.³⁰⁵ Nutrient loading contributes to oxygen depletion and excessive algae blooms in surface waters, which leads to degraded water quality, fish mortality, and other harmful ecological impacts.³⁰⁶ Moreover, algae blooms in recreational and drinking water sources can produce dangerous toxins.³⁰⁷ For example, cyanobacteria (commonly referred to as blue-green algae) multiplies or “blooms” when water is rich in nutrients from manure runoff or storage overflows, and a cyanobacterial algal bloom can produce cyanotoxins, which are harmful to people, aquatic life, and the environment.³⁰⁸

Industrial dairy and hog operations often generate more waste than the surrounding land can utilize for crop production because they confine animals in fully confined production facilities, which are concentrated in certain regions.³⁰⁹ In contrast, well-managed pasture-based systems evenly distribute manure on the land, and limit herd sizes to the amount of agricultural

³⁰¹ See *supra* notes 65 and 80; see also O. Alegbeleye, et al., *Manure-Borne Pathogens as an Important Source of Water Contamination*, 227 INT’L J. HYGIENE & ENVTL. HEALTH 113524 (2020).

³⁰² FAO, SOIL POLLUTION, *supra* note 296, at 16, 20.

³⁰³ *Id.*

³⁰⁴ *Id.* at 16, 34.

³⁰⁵ See S. Porter, et al., *Using a Spatially Explicit Approach to Assess the Contribution of Livestock Manure to Minnesota’s Agricultural Nitrogen Budget*, 10 AGRONOMY 480 (2020) (total amount of N from both commercial fertilizer and manure exceeded the N crop need in all rate scenarios).

³⁰⁶ EPA, CONTAMINANTS IN LIVESTOCK MANURE, *supra* note 295, at 47–48, 63.

³⁰⁷ *Id.* at 48 tbl.6-1 (summarizing types of harmful or nuisance inland algae, toxin production, and potential adverse impacts).

³⁰⁸ See *id.*; CDC, *Facts about Cyanobacterial Harmful Algal Blooms for Poison Center Professionals* (2018).

³⁰⁹ See, e.g., C. Heaney, et al., *supra* note 82; see also J. Powell, et al., *Measures of Nitrogen Use Efficiency & Nitrogen Loss from Dairy Production Systems*, 44 J. ENVTL. QUAL. 336 (2015) (“Dairy farms that import all grain and protein supplements have more than double the amount of manure N to manage per hectare (363 vs. 172 kg N ha⁻¹ of corn) and therefore incur much higher losses of NH₃ ha⁻¹ compared with farms that [do not import grain].”); K. Zirkle, et al., *Assessing the Relationship Between Groundwater Nitrate & Animal Feeding Operations in Iowa*, 566 SCI. TOTAL ENVIRONMENT 1062 (2016) (finding a significant relationship between the total number of animal feeding operations within 2 km of a well and groundwater nitrate concentration).

land available for optimum grazing and foraging.³¹⁰ By setting appropriate stocking rates and recovery periods, these systems avoid nutrient overloading and decrease the spread of harmful pollutants.³¹¹ Other benefits of pasture-based systems include improved soil conditions and nutrient cycling; improved drinking water quality and public health; and reduced or eliminated need for synthetic nitrogen or other agrichemical input.³¹²

Community Benefits

Reducing GHG emissions from industrial hog and dairy operations will also reduce disproportionate concentrations of air and water pollution in rural communities. For instance, industrial dairy operations rely on corn silage cropping systems to both feed cows and absorb land-applied nitrogen, but such silage emits volatile organic compounds and generates more ozone than passenger vehicles in the San Joaquin Valley, one of the most ozone polluted air basins in the U.S.³¹³ Allowing cows to graze on pasture, instead of distributing corn silage to cows in confinement feeding systems, reduces these ozone-forming emissions.

As discussed above, pasture-based production also reduces harmful airborne gas and odor emissions from industrial hog and dairy confinement facilities and manure storage. Further, pasture-based systems reduce the overall amount and concentration of liquefied manure in polluted regions because pasture-based dairy and hog producers do not need to dispose excessive amounts of liquefied manure and wastewater onto nearby fields. As a result, pasture-based systems reduce the risk of runoff, soil degradation, and drinking water contamination. Additional

³¹⁰ See, e.g., C. Zegler, et al., *Management Effects on Forage Productivity, Nutritive Value, & Legume Persistence in Rotationally Grazed Pastures*, 58 CROP SCIENCE 2657 (2018); E. Coffey, et al., *Effect of Stocking Rate & Animal Genotype on Dry Matter Intake, Milk Production, Body Weight, & Body Condition Score in Spring-Calving, Grass-Fed Dairy Cows*, 100 J. DAIRY SCI. 7556 (2017); see also J. Powell, et al., *Potential Use of Milk Urea Nitrogen to Abate Atmospheric Nitrogen Emissions from Wisconsin Dairy Farms*, 43 J. ENVTL. QUAL. 1169 (2014) (pasture-based dairy farms had the lowest N emissions due to direct deposition of urine in pasture, and farms that used tie-stall barns with daily hauling of manure had highest N emissions due to greater surface exposure of urine and continuous mixing of feces and urine by animals and scrapers during manure removal).

³¹¹ See, e.g., C. Rotz, et al., *An Environmental Assessment of Grass-Based Dairy Production*, 184 AGRIC. SYS. 102887 (2020) (“With less [nutrient] loss per unit of land [than confinement systems],” “grass-based dairy systems provide a benefit by reducing nitrogen and phosphorous losses from farms and potentially reducing pollution to downstream surface waters.”).

³¹² See NSAC, AGRIC. & CLIMATE CHANGE, *supra* note 272, at 27; see, e.g., J. Doltra, et al., *Forage Management to Improve On-Farm Feed Production, Nitrogen Fluxes & Greenhouse Gas Emissions From Dairy Systems in a Wet Temperate Region*, 160 AGRIC. SYS. 70 (2018); S. Dahal, et al., *Strategic Grazing in Beef-Pastures for Improved Soil Health & Reduced Runoff-Nitrate*, 12 SUSTAINABILITY 558 (2020) (finding that strategic grazing systems have several positive ecosystem impacts, “including an increase in active carbon, consistent respiration rate, and cleaner runoff water a reduction in nitrate in runoff water”).

³¹³ C. Howard, et al., *Reactive Organic Gas Emissions from Livestock Feed Contribute Significantly to Ozone Production in Central California*, 44 ENVTL. SCI. TECH. 2309, 2309–14 (2010); J. Hu, et al., *Mobile Source & Livestock Feed Contributions to Regional Ozone Formation in Central California*, 46 ENVTL. SCI. & TECH. 2781 (2012); see also D. Gentner, et al., *Emissions of Organic Carbon & Methane From Petroleum & Dairy Operations in California’s San Joaquin Valley*, 14 ATMOS. CHEM. PHYS. 4955–78 (2014) (finding that dairy operations and petroleum operations were each responsible for 22% of anthropogenic non-methane organic carbon emissions. and 13% of potential anthropogenic ozone formation)

community health benefits include reduced exposure to airborne pathogens from manure disposal on nearby fields.

Agricultural Benefits

Reducing GHG emissions from industrial hog and dairy operations will increase climate resiliency and adaptive capacity in the U.S. hog and dairy sector. As discussed above, the expansion of highly concentrated and industrialized operations makes U.S. hog and dairy production more vulnerable to extreme weather events, power outages, and other climate change impacts.³¹⁴ Pasture-based systems are not only more resilient to climate change impacts, but they also mitigate the direct climate change risks to U.S. dairy and hog production, from heat waves to water shortages to new disease and insect threats.³¹⁵ Well-managed pasture-based systems can reduce the overall stress on hogs and dairy cows brought on through climate change.³¹⁶ Further, animals “engag[ing] in natural behaviors outside as opposed to being crowded together indoors tend to be healthier and need fewer antibiotics, which reduces production costs and the rate of antibiotic resistance in food-borne bacteria.”³¹⁷ In addition to reducing the GHG footprint of hog and dairy operations, pasture-based systems protect soil, air, and water quality, and increase resiliency in rural areas with the highest exposure and risk to climate change impacts.³¹⁸ All these benefits work together to make hog and dairy production systems more resilient to climate change impacts.

Thus, to achieve climate goals and co-benefits, EPA should calculate emission reduction standards based on the amount of reductions achievable through adoption of pasture-based systems. In doing so, EPA will significantly reduce fossil fuel consumption,³¹⁹ and overall GHG

³¹⁴ See *supra* notes 229 to 232; see, e.g., K. Martin, et al., *The Unknown Risks to Environmental Quality Posed by the Spatial Distribution & Abundance of Concentrated Animal Feeding Operations*, 642 SCI. TOTAL ENVIRONMENT 887 (2018) (increased storm intensity and longer dry periods due to climate change could exacerbate the environmental impacts CAFOs in Coastal Plain, a low-lying region vulnerable to flooding).

³¹⁵ See IPCC, CLIMATE CHANGE & LAND, *supra* note 42, at 5-48 and 5-100 (discussing the benefits of diversified production systems and agro-ecological approaches); J. Steiner, et al., *Vulnerability of Southern Plains Agriculture to Climate Change*, 146 CLIMATE CHANGE 201 (2018) (explaining how farms can improve adaptive capacity through enterprise adaptations emphasizing “adjustment of livestock herd size and composition to match forage supply with demand,” including integrated crop-livestock systems).

³¹⁶ NSAC, AGRIC. & CLIMATE CHANGE, *supra* note 272, at 27.

³¹⁷ *Id.*; see also G. Arnott, et al., *Review: Welfare of Dairy Cows in Continuously Housed & Pasture-Based Production Systems*, 11 ANIMAL 261, 261-73 (2017) (“cows on pasture-based systems had lower levels of lameness, hoof pathologies, hock lesions, mastitis, uterine disease and mortality compared with cows on continuously housed systems”); F. Grandl, et al., *Impact of Longevity on Greenhouse Gas Emissions & Profitability of Individual Dairy Cows Analysed with Different System Boundaries*, 13 ANIMAL 198 (2019) (“increasing the length of productive life of dairy cows is a viable way to reduce the climate impact [and] to improve profitability of dairy production”).

³¹⁸ NSAC, AGRIC. & CLIMATE CHANGE, *supra* note 272, at 26; see also D. O’Brien, et al., *A Life Cycle Assessment of Seasonal Grass-based & Confinement Dairy Farms*, 107 AGRIC. SYS. 33 (2012) (confinement systems had a greater impact on global warming, eutrophication, acidification, land use, and non-renewable energy use than grass-based system per unit of milk and per on-farm area).

³¹⁹ See, e.g., E. Llanos, et al., *Energy & Economic Efficiency in Grazing Dairy Systems under Alternative Intensification Strategies*, 91 EUROPEAN J. AGRONOMY 133, 133-40 (2018) (“dairy farms with a higher proportion of pasture consumption . . . used less fossil energy per liter of milk”).

emissions from agricultural activities.³²⁰ EPA will also help make the U.S. agricultural sector more resilient to climate change impacts.³²¹

Implementation Costs

Pasture-based systems are economically viable and beneficial. Because pasture does not require costly infrastructure or equipment, farmers do not need to obtain large amounts of funding to build or maintain infrastructure (e.g., buildings or liquefied manure management systems, pipelines).³²² Nor do farmers need to enter into complicated funding and purchasing arrangements with government entities or private investors to remain profitable or economically viable.³²³

Adopting sustainable land management practices and technologies requires an average of \$500 per hectare (or approximately \$202.34 per acre) in upfront investments, and “[m]any sustainable land management technologies and practices are profitable within three to ten years.”³²⁴ Moreover, sustainable land management practices “can improve crop yields and the economic value of pasture”; “improve livelihood systems”; and “provide both short-term positive economic returns and longer-term benefits in terms of climate change adaptation and mitigation, biodiversity, and enhanced ecosystem functions and services.”³²⁵ In addition, “[n]ear-term change to balanced diets . . . can reduce the pressure on land and provide significant health co-benefits through improving nutrition.”³²⁶

³²⁰ See, e.g., Dutreuil, et al., *supra* note 272, at 5904–17 (“incorporation of grazing practices for lactating cows in the conventional farm led to a 27.6% decrease in total GHG emissions [-0.16 kg of CO₂ eq./kg of energy corrected milk]”).

³²¹ See, e.g., C. Rotz, et al., *Environmental Assessment of Grass-Based Dairy*, *supra* note 311, at 6 (“fossil energy use was much less for the all-grass production system than for the [confinement] system using grain supplementation, primarily due to the energy required to produce and transport grain”); B. Horan, et al., *Defining Resilience in Pasture-Based Dairy-Farm Systems in Temperate Regions*, 60 ANIMAL PROD. SCI. 55, 55–66 (2019) (explaining how resilient grazing systems minimize the need “for machinery and housing, and exposure to feed prices”).

³²² See, e.g., J. Hanson, et al., *Competitiveness of Management-Intensive Grazing Dairies in the mid-Atlantic Region from 1995 to 2009*, 96 J. DAIRY SCI. 1894, 1901 (2013) (“Management-intensive grazing operations require less equipment for crop production and smaller freestall areas in barns (because cows spend more of their time grazing in pasture) [than confinement systems.]”; see also *id.* at 1900 (“Because confinement operators had more crop equipment than [pasture-based] operators, their depreciation and maintenance costs were higher.”).

³²³ *Id.* at 1901 (“Lower upfront investment costs make [well-managed pasture-based systems] easier to finance and thus more accessible to new entrants lacking capital [than confinement systems.]”).

³²⁴ IPCC, CLIMATE CHANGE & LAND, *supra* note 42, at 40.

³²⁵ *Id.*

³²⁶ *Id.*

Further, pasture-based systems have several economic and environmental benefits for farmers and agricultural communities.³²⁷ For example, integrating perennial forage plants into corn and soybean fields is not only an effective method of improving biodiversity and reducing soil and groundwater contamination from manure land applications, but also one of the least expensive conservation practices available to farmers, with an average annual cost of \$60 to \$85 per treated hectare.³²⁸ In addition, by diversifying corn and soybean fields with perennial forage plants, farmers can reduce reliance on mineral fertilizer, pesticides, and fossil fuel energy; and improve crop yields, profitability, environmental quality, and weed and pest suppression.³²⁹

Pasture-based systems are more profitable and efficient than industrial, confinement-based systems “on a per hundredweight, per cow, and per acre basis, and no less profitable on a whole-farm basis.”³³⁰ Pasture-based systems also have lower operational expenses due to reduced hired labor and capital costs, as well as reduced veterinary, breeding, and medicine costs per cow.³³¹ In addition, pasture-based systems are less vulnerable to price declines and market instability than industrial operations because profits are more stable on pasture-based operations.³³² Further, because climate change will likely increase the cost of imported feed,³³³ pasture-based systems will be less vulnerable to climate-related impacts on feed production.

³²⁷ M. Liebman, et al., *Enhancing Agroecosystem Performance & Resilience Through Increased Diversification of Landscapes & Cropping Systems*, 3 ELEMENTA SCI. 41 (2015); A. Franzluebbbers, et al., *Building Agricultural Resilience With Conservation Pasture-Crop Rotations* in AGROECOSYSTEM DIVERSITY, 109–121 (2019) (arguing that “integrating pastures and crops with other ecologically based practices leads to dramatic improvement in soil organic C and N contents and associated soil quality properties”); M. Sanderson, et al., *Diversification & Ecosystem Services For Conservation Agriculture: Outcomes From Pastures & Integrated Crop-Livestock Systems*, 28 RENEWABLE AGRIC. & FOOD SYS. 129 (2013); H. Asbjornsen, et al., *Targeting Perennial Vegetation in Agricultural Landscapes For Enhancing Ecosystem Services*, 29 RENEWABLE AGRIC. & FOOD SYS. 101 (2014).

³²⁸ J. Tyndall, et al., *Field-Level Financial Assessment of Contour Prairie Strips for Enhancement of Environmental Quality*, 52 ENVTL. MGMT. 736 (2013).

³²⁹ A. Davis, et al., *Increasing Cropping System Diversity Balances Productivity, Profitability & Environmental Health*, 7 PLoS ONE e47149 (2012).

³³⁰ J. Hanson, et al., *supra* note 322, at 1894; *see also* J. Gillespie, et al., *Pasture-Based versus Conventional Milk Production: Where Is the Profit?*, 46 AGRIC. & APPLIED ECON. 543, 554 (2014) (net return over total cost was approximately \$36,000 higher on pasture-based operations than matched conventional operations due to “higher gross value of milk production and lower operating expenses on pasture-based operations”).

³³¹ J. Hanson, et al., *supra* note 322, at 1894, 1898; J. Gillespie & R. Nehring, *supra* note 330, at 552 (“total feed cost was lower on pasture-based operations [than confinement operations] on both per-cow and total expense bases”); *see also* J. Hanson, et al., *supra* note 322, at, 1899 (pasture-based operators “had higher cattle sales per cow than confinement operators” because “cows that are grazed have a longer productive life and [a lower] annual culling percentage for the herd”); CTR. FOR INTEGRATED AGRIC. SYS., *PASTURED HEIFERS GROW WELL & HAVE PRODUCTIVE FIRST LACTATION* (2013) (“heifers on managed pastures match the weights and age at first calving of their confined counterparts,” and “outperformed the confinement heifers in terms of average daily gain during the pasture season and milk production in their first lactation”).

³³² J. Hanson, et al., *supra* note 322, at 1900, 1901 (“Management-intensive grazing systems may also enhance the sustainability of small dairy operations by allowing entry of greater numbers of young farmers.”).

³³³ A. CRANE-DROESCH, ET AL., ERS, USDA, *CLIMATE CHANGE & AGRICULTURAL RISK MANAGEMENT INTO THE 21ST CENTURY* (2019) (“All climate scenarios considered suggest that climate change would lower domestic production of corn, soybeans, and wheat,” suggesting that “prices would be higher than they would otherwise.”).

Given these factors and benefits, pasture-based systems are the best system of emission reduction. Therefore, EPA should establish new source performance standards based on the methane reductions achievable with pasture-based dairy and hog production. EPA should also require states to do the same for existing sources within their borders by promulgating emission guidelines that identify pasture-based systems as the best system for reducing methane emissions from existing industrial dairy and hog sources.

2. Factory Farm Gas is a false solution.

The factory farm gas scheme – so-called biogas energy – recovers methane from anaerobic digestion of manure, produces dirty energy, and does not meet the best system of emission reduction. Industrial hog and dairy operations cannot achieve the maximum emission reduction with anaerobic digesters to produce biogas from decomposing liquefied manure.³³⁴ Biogas recovery would not reduce enteric emissions, provide for carbon sequestration in soil, and would not reduce nitrous oxide emissions from manure land application, among other forgone GHG emissions reductions. Industrial hog and dairy operations' continued use of liquefied manure management systems will have adverse and long-lasting environmental, economic, and public health impacts.

i. Factory Farm Gas has no place in a clean energy economy.

Corporate conglomerates with an ownership interest in the oil and gas industry, and their allied industrial hog and dairy operations, tout so-called biogas as a cleaner and more environmentally friendly source of energy than fossil fuel gas, and the solution to reducing emissions, achieving full electrification, and fighting climate change.³³⁵ These claims are not only false, but they are deliberately intended to safeguard the role of fossil gas in the transition from dirty fossil fuels (e.g., oil, coal, and natural gas) to clean zero-emission sources of energy (e.g., solar and wind). Some of the most vocal proponents of biogas are front groups for investor-owned utilities with an institutional interest in continuing the investment and use of fossil gas.³³⁶ As stated by a dairy executive on record with the Guardian, however, biogas is not a realistic replacement for fossil gas because it is “‘way too expensive’ to use in homes or businesses” and “‘doesn’t make all that much sense from an environmental standpoint.”³³⁷

So-called biogas as BSER will increase reliance on dirty energy, delay the transition to clean renewable energy, and hinder ongoing efforts to meet emission reduction targets. A standard based on smaller herd sizes and pasture-based management systems will not only

³³⁴ This section focuses exclusively on biogas produced from the anaerobic decomposition of waste on industrial hog and dairy operations. For convenience, the section refers to manure-to-biogas systems as “biogas.”

³³⁵ See, e.g., SOUTHERN CAL. GAS CO., *Biogas & Renewable Energy* (last accessed Mar. 11, 2020), <https://www.socalgas.com/smart-energy/renewable-gas/biogas-and-renewable-natural-gas>; DUKE ENERGY CORP., *Biogas: An Alternative Energy Source with a Bright Future* (last accessed Mar. 11, 2020), <https://www.duke-energy.com/our-company/environment/renewable-energy/biopower>.

³³⁶ See, e.g., S. Cagle, *U.S. Gas Utility Funds ‘Front’ Consumer Group To Fight Natural Gas Bans*, THE GUARDIAN (Jul. 26, 2019), <https://www.theguardian.com/us-news/2019/jul/26/us-natural-gas-ban-socalgas-berkeley>.

³³⁷ *Id.*

achieve more methane emission reductions, but it will also recognize additional GHG reductions and environmental benefits.

Factory Farm Gas increases dependence on dirty fossil fuels.

So-called biogas is not a clean alternative to fossil fuels because biogas supplies cannot meet energy demand for buildings and vehicles. For example, the amount of biomethane potentially available in California from all sources would only meet 3 percent of the state's demand for natural gas.³³⁸ Moreover, “[a]ssuming California could access up to its population-weighted share of the U.S. supply of sustainable waste-product biomass,” biomethane “would not displace the necessary amount of building and industry fossil natural gas consumption to meet the state’s long-term climate goals.”³³⁹ Likewise, switching to biofuel would not meet long-term targets for heavy duty truck emissions.³⁴⁰

Thus, because biogas can only supply a small fraction of total fuel needs, biogas increases reliance on dirty fossil fuels and undermines long-term climate goals. As one recent study in California concluded, one of the most effective and cost-efficient strategies for reducing GHG emissions by 80 percent by 2050 is “building electrification, which reduces the use of gas in buildings,” *not* biomethane.³⁴¹ In addition, “electrification across all sectors, including in buildings, leads to significant improvements in outdoor air quality and public health.”³⁴²

³³⁸ CAL. ENERGY COMMISSION (CEC), INTEGRATED ENERGY POLICY REPORT UPDATE, VOL. II, at 42 (Aug. 1, 2018) (concluding that biogas “is limited and at best could meet only 0.6 percent to 4.1 percent of California’s total gas consumption”); CEC, BUILDING A HEALTHIER & MORE ROBUST FUTURE: 2050 LOW-CARBON ENERGY SCENARIOS FOR CALIFORNIA 59 (2019) (finding that transitioning to biofuels will not sufficiently reduce emissions to meet 2050 targets); UNION OF CONCERNED SCIENTISTS, THE PROMISES & LIMITS OF BIOMETHANE AS A TRANSPORTATION FUEL 2–3 (2017) (noting that “[i]ncreasing the number of [biofuel] vehicles in California could ultimately increase the state’s consumption of natural gas”).

Several states have made similar findings. *See, e.g.*, WASH. STATE UNIV., PROMOTING RENEWABLE NATURAL GAS IN WASH. STATE 34 (2018) (finding that biomethane or biofuel could potentially meet 3 to 5 percent of current natural gas consumption in Washington); OREGON DEP’T OF ENERGY, 2017 BIOGAS & RENEWABLE NATURAL GAS INVENTORY (2018) (finding that biomethane or biofuel could potentially meet 10 to 20 percent of natural gas consumption in Oregon).

³³⁹ CEC, DEEP DECARBONIZATION IN A HIGH RENEWABLES FUTURE 33 (2018).

³⁴⁰ CEC, BUILDING A HEALTHIER & MORE ROBUST FUTURE, *supra* note 338, at 59.

³⁴¹ CEC, NATURAL GAS DISTRIBUTION IN CALIFORNIA’S LOW-CARBON FUTURE: TECH. OPTIONS, CUSTOMER COSTS & PUB. HEALTH BENEFITS iii (2019).

³⁴² *Id.*; *see also* B. Zhao, et al., *Air Quality & Health Cobenefits of Different Deep Decarbonization Pathways in California*, 53 ENVTL. SCI. TECH. 7163 (2019) (finding that “a technology pathway focusing on electrification and clean renewable energy results in four times more health cobenefits than a pathway featuring combustible renewable fuel application”).

Moreover, several states and cities across the United States have already started to phase out fossil fuel-based natural gas.³⁴³

Factory Farm Gas requires substantial investment in stranded assets.

So-called biogas is not economically viable. Farm owners and operators need a tremendous amount of capital to develop, operate, and maintain anaerobic digesters. Typically, farms need approximately \$2 to \$6 million to build an anaerobic digester, depending on the volume of manure the digester will process and other factors (e.g., location).³⁴⁴ Because it is nearly impossible for most farms to generate enough revenue to cover upfront capital costs, farms must rely heavily on grants and public funds.³⁴⁵ These investment costs do not include the upfront cost of constructing or connecting to a pipeline, which requires additional public funding or financing from utility rate-payers.

This infrastructure is not only expensive to construct, but also expensive to maintain and operate.³⁴⁶ The profitability of the biogas system also depends on the ability to negotiate a contract or power purchase agreement with a utility company interested in purchasing the electricity output at a reasonable rate.³⁴⁷ Moreover, the revenue potential is limited because the expected lifetime of a digester system is only 10 years, excluding the individual components, which often require more frequent maintenance and replacement (e.g., engines).³⁴⁸

In the climate and energy scenarios to meet IPCC reduction goals, these capital investments will become stranded assets when the economy shifts to non-combustion building and transportation solutions. The California Public Utilities Commission (CPUC) has, as a result, recently opened a proceeding to manage the transition from gas as an energy source.³⁴⁹

³⁴³ See, e.g., CEC, INTEGRATED ENERGY REPORT, *supra* note 338, at 38–42 (describing California’s efforts to transition from natural gas); Lauren Sommer, *San Francisco Proposes Natural Gas Ban, Following Other Bay Area Cities*, KQED (Sep. 24, 2019), <https://www.kqed.org/science/1945656/trade-in-your-gas-stove-to-save-the-planet-berkeley-bans-natural-gas>; Rick Sobey, *Brookline Bans Natural Gas, Heating Oil Pipes for New Buildings*, BOSTON HERALD (Nov. 21, 2019), <https://www.bostonherald.com/2019/11/21/brookline-bans-natural-gas-heating-oil-pipes-for-new-buildings-gas-is-the-past>.

³⁴⁴ In 2019, the average cost for a publicly funded dairy digester project in California was \$5.4 million. CAL. DEP’T OF FOOD & AGRIC. (CDFA), 2019 DAIRY DIGESTER RES. & DEV. PROGRAM: APPLICATIONS; *see also*

³⁴⁵ *See id.* California offers dairies up to \$3 million per project, so long as the applicant contributes at least 50 percent of total project cost in matching funds, which can come from private investors or another government funding program. CDFA, 2019 DAIRY DIGESTER RES. & DEV. PROGRAM: REQUEST FOR APPLICATIONS 6 (Dec. 8, 2018).

³⁴⁶ See H. Lee & D. Sumner, *Dependence on Policy Revenue Poses Risks for Investments in Dairy Digesters*, 72 CAL. AGRIC. 226 (2018).

³⁴⁷ See EPA, AGSTAR, *Project Financing* (last accessed Mar. 11, 2020), <https://www.epa.gov/agstar/project-financing> (“A utility contract or power purchase agreement has a major influence on the profitability of a project.”).

³⁴⁸ See, e.g., PENN STATE UNIV. EXTENSION, *Agric. Anaerobic Digesters: Design & Operation* (Dec. 2016), <https://extension.psu.edu/agricultural-anaerobic-digesters-design-and-operation>.

³⁴⁹ CPUC, Order Instituting Rulemaking to Establish Policies, Processes, & Rules to Ensure Safe & Reliable Gas Systems in California and Perform Long-Term Gas System Planning (Jan. 27, 2020).

EPA should not base its performance standard on farms paying out-of-pocket or obtaining public funding for false solutions that perpetuate resource-intensive industrial animal agriculture systems, increase climate change risks, and require substantial infrastructure investments with significant risk.

Factory Farm Gas increases emissions from industrial hog and dairy operations.

Proponents of so-called biogas claim that biogas is a “clean” energy because it captures methane emissions from liquefied manure decomposition for electricity or transportation fuel. However, liquefied manure decomposition is not a necessary part of hog or dairy production, and industrial hog and dairy operations can avoid these emissions by adopting a pasture-based model of production.³⁵⁰ In other words, the industrial model is a production choice made by the operator and methane from liquefied manure does not reflect an inevitable waste product.

Instead of encouraging operators to eliminate or reduce emissions from liquefied manure management systems, biogas *increases* emissions from methane enteric emissions by incentivizing industrial hog and dairy operations to increase herd size to maximize methane production and cover the substantial cost of building and maintaining biogas infrastructure:

[R]ather than avoiding methane generation altogether, [digesters] can actually create incentives to generate methane from manure. The more methane that is produced then converted to electricity or biogas, the higher the revenue for the digester operator . . . Especially in light of the [significant] financial strains that digester investment can bring about, this is a potential perverse incentive”³⁵¹

As this Petition documents above, the industrial model of dairy and hog production evolved from the pasture-based model and represents a management decision to liquefy manure while maximizing herd size. This makes the methane from liquefied manure at industrial dairy and hog operations intentionally produced and that which would not otherwise occur as waste methane. In such a situation, corresponding methane leaks from biogas systems are additional, negate the climate benefits of methane capture and destruction, and must be factored into EPA’s analysis.³⁵²

³⁵⁰ In pasture-based operations, manure management is only required when animals deposit manure in temporary or partial confinement areas, such as milking stations and walkways.

³⁵¹ CAL. CLIMATE & AGRIC. NETWORK, DIVERSIFIED STRATEGIES FOR REDUCING METHANE EMISSIONS FROM DAIRY OPERATIONS 3 (2015); *see also* M. Lauer et al., *Making Money from Waste: The Economic Viability of Producing Biogas & Biomethane in the Idaho Dairy Industry*, 222 APPLIED ENERGY 621 (2018) (“At least, 3000 cows per farm are needed for an economically feasible use of dairy manure for the production of biogas.”); Z. Debruyne, et al., *Increased Dairy Farm Methane Concentrations Linked to Anaerobic Digester in a Five-Year Study*, 49 J. ENVTL. QUAL. 509 (2020) (methane emissions from biogas facility increased over time due “an increased use of food waste feedstocks”).

³⁵² E. Grubert, *At Scale, Renewable Natural Gas Systems Could Be Climate Intensive: The Influence of Methane Feedstock & Leakage Rates*, 15 ENVTL. RES. LETTERS 084041 (2020).

Thus, biogas is not an effective emission reductions strategy because it encourages industrial operations to produce more manure as a biogas feedstock, which results in more GHGs and air pollutants in the atmosphere.

Factory Farm Gas increases emissions from electricity generation.

So-called biogas is dirty energy because generating electricity and heat from biogas increases emissions. To generate on-farm electricity, operators typically burn biogas with internal combustion engines, which emit significant criteria pollutants, including particulate matter, carbon monoxide, and sulfur dioxide.³⁵³ Biogas combustion also emits ozone-forming criteria pollutants (i.e., nitrogen oxides (NOx)).³⁵⁴ In fact, twenty biogas systems using internal combustion engines would emit as much ozone-forming (smog) NOx pollution as a modern natural gas-fired power plant, but generate only 4 percent of the electricity.³⁵⁵

Moreover, because some biogas producers are located in areas with existing air pollution problems, these emissions exacerbate pollution disparities and make local communities more vulnerable to climate change.³⁵⁶ Thus, using biogas for electricity generation contributes to rising GHGs and climate change risks by increasing carbon dioxide and other localized criteria pollutants in the atmosphere.

Factory Farm Gas facilitates emissions from natural gas.

The limited amount of so-called biogas inherently means that fossil gas use will continue to hinder the transition to zero carbon energy. When operators upgrade biogas to biomethane, they can inject it into natural gas pipelines because it has the same composition as fossil natural gas.³⁵⁷ As a result, there are no additional benefits to combusting biomethane mixed with natural gas. When the mixed gas is combusted as fuel, it enters the atmosphere as carbon dioxide, another greenhouse gas. Thus, the use of biomethane will perpetuate GHG emissions from fossil

³⁵³ CAL. STATE UNIV., FULLERTON, AIR QUALITY ISSUES RELATED TO USING BIOGAS FROM ANAEROBIC DIGESTION OF FOOD WASTE 1, 8–9 (2015).

³⁵⁴ M. KOSUSKO, ET AL., AIR QUALITY, CLIMATE & ECON. IMPACTS OF BIOGAS MGMT. TECHNOLOGIES 1 (2016).

³⁵⁵ Cal. Assembly Budget Subcomm. No. 3, Resources & Transportation, *Hearing Agenda*, at 17 (Apr. 19, 2017).

³⁵⁶ *Id.*; M. KOSUSKO, ET AL., *supra* note 354, at 1, 2 fig.2; CAL. AIR RES. BD. (CARB), ASSESSMENT OF THE EMISSIONS & ENERGY IMPACTS OF BIOMASS & BIOGAS USE IN CALIFORNIA 1, 81 (Feb. 2015) (“[B]iopower production could increase NOx emissions by 10% in 2020, which would cause increases in ozone and PM concentrations in . . . areas . . . where ozone and PM concentrations exceed air quality standards constantly throughout the year”), 48–49, 100 (noting that “[i]ncreases in ozone . . . could seriously hinder the effort of air pollution control districts to attain ozone standards in areas like the Central Valley”).

³⁵⁷ N. WENTWORTH, A DISCUSSION ON THE FUTURE OF NATURAL GAS IN CALIFORNIA 3 (2018) (“For the case of [renewable natural gas or biomethane], methane is captured from sources that would typically emit the methane to the atmosphere and processes the methane into pipeline-quality natural gas to transport to the customer. Emissions from end-use combustion remain the same as do fugitive emissions from the in-state distribution of the gas.”).

natural gas combustion.³⁵⁸ Emissions reductions, not fuel substitution, must occur to meet GHG emissions reduction targets.

Further, when natural gas leaks before it reaches the end user, it enters the atmosphere as methane, a greenhouse gas far more potent than carbon dioxide. Therefore, methane leakage from production, transportation, storage, and distribution infrastructure will offset any emissions diverted by replacing oil and coal with natural gas derived from liquefied manure.³⁵⁹ Likewise, the construction and maintenance of biogas infrastructure can also produce significant GHG emissions, which further offsets any purported benefits to fuel-switching.

In sum, biogas conflicts with climate goals because it requires continued use of fossil fuels, delays the transition to zero-carbon electricity, and contributes to rising GHGs and localized air pollution. Therefore, any standard that promotes biogas will waste significant time and resources, and stymie ongoing efforts to achieve emission reduction targets and other environmental benefits with electrification and clean renewable energy.³⁶⁰ Unlike biogas, pasture-based systems do not prop up the continued combustion of fossil fuels. Thus, the best system of emissions reductions for methane emissions from industrial hog and dairy operations is pasture-based production systems.

ii. *Factory Farm Gas entrenches the industrial model of animal agriculture.*

In addition to conflicting with state and international goals to significantly reduce GHG emissions,³⁶¹ so-called biogas increases air and water pollution in communities with a disproportionately high pollution burden.

³⁵⁸ *Id.*; see also CEC, NATURAL GAS DISTRIBUTION IN CALIFORNIA, *supra* note 341 (noting that “the CO₂ emissions from burning . . . renewable gasoline and biomethane . . . would have occurred anyway as the biomass decayed”).

³⁵⁹ See R. Alvarez, et al., *Greater Focus Needed on Methane Leakage from Natural Gas Infrastructure*, 109 PNAS 6435, 6436–37 (2012) (switching gasoline with compressed natural gas or biofuel would not reduce climate impacts unless the leakage rate of natural gas infrastructure was under 1.6%); E. Grubert, *supra* note 352, at 1 (“methane leakage from biogas production and upgrading facilities . . . is [anticipated to be] in the 2%–4% range”); T. Flesch, et al., *Fugitive Methane Emissions From An Agricultural Biodigester*, 35 BIOMASS & BIOENERGY 3927 (2011) (“average fugitive emission rate [of manure digester] corresponded to 3.1% of the CH₄ gas production rate”); see also CEC, NATURAL GAS DISTRIBUTION IN CALIFORNIA, *supra* note 341, at 8 (“non-combustion greenhouse gas emissions must be reduced, including [emissions from] methane leakage,” to achieve reduction targets), 51 (“Remaining non-combustion GHG emissions include CO₂ released during the production of cement” and “nitrous oxide resulting from the application of fertilizer . . .”).

³⁶⁰ See *supra* note 343.

³⁶¹ See IPCC, GLOBAL WARMING OF 1.5°C, *supra* note 112; see also California’s Executive Order S-3-05 (setting a target for 80% reduction in California’s GHG emissions by 2050); New York’s Climate Leadership & Community Protection Act, Art. 75, Sec. 75-0107 (requiring 85% reduction in New York’s GHG emissions by 2050); Colorado’s Climate Action Plan (requiring 90% reduction in GHG emissions by 2050); New Mexico’s Energy Transition Act (requiring 100% reduction in GHG emissions by 2050); Press Release: Governor Whitmer Announces Bold Action to Protect Public Health & Create Clean Energy Jobs by Making Michigan Carbon-Neutral by 2050 (Sep. 23, 2020); Sierra Club, Map of U.S. Cities Committed to 100% Clean Energy.

Environmental & Public Health Impacts

So-called biogas increases methane emissions from enteric fermentation by incentivizing producers to increase the number of animals in confinement with low-quality diets.³⁶² Likewise, biogas dramatically increases ammonia emissions from liquefied manure management systems,³⁶³ which leads to increased odor, fine particulate matter, and other negative impacts (e.g., ecosystem change).³⁶⁴ Further, according to recent studies, biogas digestate storage emits significant amounts of volatile organic compounds, odorous pollutants, and hazardous air pollutants.³⁶⁵

By incentivizing increased manure generation and reliance on liquefied manure management systems, biogas also increases methane and nitrous oxide emissions from the subsequent disposal and land application of liquefied manure and wastewater on agricultural lands. In addition, biogas production increases the harmful soil and water impacts of nutrient loading and runoff by increasing the concentration of industrial dairy and hog operations in rural communities, and the amount of liquefied manure applied to nearby fields.³⁶⁶

Community Impacts

By incentivizing industrial dairy and hog operations to increase herd size and manure production, biogas threatens to exacerbate existing social and environmental inequities in communities with a high concentration of industrial hog and dairy operations.³⁶⁷ Biogas significantly increases the pollution burden in the communities surrounding industrial hog and dairy operations, which already suffer from disproportionately high environmental, and public

³⁶² According to several recent assessments, one of the most effective ways to reduce enteric methane emissions from hogs and dairy cows is to improve animal diets through high-quality forage feed, which is more nutritious and digestible than grain feed. *See* NSAC, AGRIC. & CLIMATE CHANGE, *supra* note 272, at 26 (explaining how changing the grain to forage ratio in dairy cows' diets can significantly reduce enteric methane emissions).

³⁶³ *See* M. Holly, et al., *Greenhouse Gas & Ammonia Emissions from Digested & Separated Dairy Manure During Storage & After Land Disposal*, 239 AGRIC., ECOSYSTEMS & ENVIRONMENT 410, 417 (2017) (manure processed in anaerobic digesters had 81% more ammonia emissions than other manure management systems, "meaning that if [anaerobic digestion] is implemented at all dairies in the U.S., this could result in an increase of 143 Gg [ammonia] emissions per year").

³⁶⁴ *See supra* notes 143 to 146.

³⁶⁵ Y. Zhang, et al., *Characterization of Volatile Organic Compound Emissions from Swine Manure Biogas Digestate Storage*, 10 ATMOSPHERE 411 (2019) (biogas digestate storage emitted 49 compounds of VOCs, including 22 hazardous air pollutants listed by EPA and other odorous compounds)

³⁶⁶ *See, e.g.*, M. Lauer, et al., *supra* note 351 ("[A]naerobic digestion cannot prevent the negative impact of nitrogen contamination imposed by concentrated livestock farming on water systems . . ."); CARB, EVALUATION OF DAIRY MANURE MANAGEMENT PRACTICES FOR GHG EMISSIONS MITIGATION IN CALIFORNIA 70-71 (2016); *see also* C. Liu, et al., *Temporal Effects of Repeated Application of Biogas Slurry on Soil Antibiotic Resistance Genes & Their Potential Bacterial Hosts*, 258 ENVTL. POLLUTION 113652 (2020).

³⁶⁷ *See supra* notes 64 (disproportionate impacts of industrial dairy operations), 83 (industrial hog operations), and 184 (climate change); *see also* J. Lenhardt, et al., *Environmental Injustice in the Spatial Distribution of CAFOs in Ohio*, 6 ENVTL. JUSTICE 133 (2013) ("[B]lack and Hispanic populations, as well as households with relatively low incomes, are disproportionately exposed to CAFOs [in Ohio.]").

health risks and socioeconomic vulnerabilities, because biogas combustion emits large amounts of localized air pollutants.³⁶⁸ In addition, by enabling industrial hog and dairy operations to continue to rely on confinement production and liquefied manure management systems, such operations will continue to pose the greatest threat to local residents, wildlife, and natural resources.³⁶⁹ Surrounding communities will also continue to suffer disproportionate economic and physical harm due to odors, pathogens, and other intolerable nuisance conditions caused by liquefied manure management and land application.³⁷⁰ Thus, biogas production entrenches a highly polluting model of dairy and hog production with disparate impacts on frontline and vulnerable communities. And biogas production increasingly relies on the revenue from “offsets” or pollution trading scheme credits sold to entities that continue to emit GHGs and co-pollutants (e.g. an oil refinery, power plant, cement plant), which results in continued or increased pollution in often majority Black, Latino, or other communities. When pollution trading provides revenues for biogas operators, then communities on both sides of the transaction can suffer.

In sum, any standard that purports to reduce methane with biogas technology will not only increase emissions and endanger public health and welfare, but also entrench the use of manure lagoons and other industrialized animal production systems. Moreover, this technology does not address other problems associated with industrialized animal agriculture, including water pollution and the public health impacts of air pollution from these industrial operations on surrounding communities.

///

///

///

³⁶⁸ See *supra* notes 353 and 356; see also CARB, BIOGAS IMPACT REPORT, *supra* note 356, at 1 (describing how “biopower production” will increase air pollution “in large areas of the Central Valley where ozone and PM concentrations exceed air quality standards constantly throughout the year”); 100 (“Increases in ozone are localized around the biopower facilities and downwind areas,” and “could seriously hinder the effort of air pollution control districts to attain ozone standards in areas like the Central Valley . . .”).

³⁶⁹ See *supra* Part IV.B.

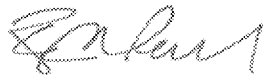
³⁷⁰ See *supra* note 367; see also S. Wing, et al., *Odors from Sewage Sludge & Livestock: Associations with Self-Reported Health*, 129 PUBLIC HEALTH REPORTS 505 (2014) (residents near manure application sites have reduced quality of life due to excessive pests and odors).

CONCLUSION

EPA must add industrial dairy and hog operations to its list of categories of stationary sources under section 111 of the Clean Air Act because these source categories satisfy the requisite standard. Accordingly, within one year of listing industrial dairy and hog operations, EPA must initiate a rulemaking to implement standards of performance and emission guidelines to reduce methane emissions from new and existing sources within these sources categories. Further, EPA will be able to fulfill its statutory responsibility to promulgate such standards based on pasture-based dairy and hog farms as the Best System of Emissions Reduction.

Date: April 6, 2021

Respectfully submitted,



Brent Newell
Kristina Sinclair
Public Justice Foundation
1620 L Street NW, Suite 630
Washington, DC 20036
bnewell@publicjustice.net
ksinclair@publicjustice.net

Ben Lilliston
Institute for Agriculture and Trade Policy
2105 1st Avenue S
Minneapolis, Minnesota 55404
blilliston@iatp.org

Abel Russ
Environmental Integrity Project
1000 Vermont Avenue NW, Suite 1100
Washington, DC 20005
aruss@environmentalintegrity.org

Tom Frantz
Association of Irrigated Residents
29389 Fresno Avenue
Shafter, California 93263
tom.frantz49@gmail.com

Rebecca Spector
Center for Food Safety
660 Pennsylvania Avenue SE, Suite 402
Washington, DC 20003
rspector@centerforfoodsafety.org

Caroline Farrell
Center on Race, Poverty & Environment
5901 Christie Avenue, Suite 208
Emeryville, California 94608
cfarrell@crpe-ej.org

Frank James
Dakota Rural Action
PO Box 549
Brookings, South Dakota 57006
fejames@dakotarural.org

Ilana Braverman
Farm Forward
PO Box 4120
Portland, Oregon 97208
ilana@farmforward.com

Tarah Heinzen
Food & Water Watch
2009 NE Alberta St., Suite 207
Portland, OR 97211
Phone: (202) 683-2457
theinzen@fwwatch.org

Amy Wong
Friends of Family Farmers
PO Box 396
Corbett, Oregon 97019
amy@friendsoffamilyfarmers.org

Kari Hamerschlag
Friends of the Earth
1101 15th Street NW, 11th Floor
Washington, DC 20005
khamerschlag@foe.org

Amanda Hitt
Government Accountability Project
1612 K Street NW, Suite 1100
Washington, DC 20006
amandah@whistleblower.org

Nicholas Leonard
Great Lakes Environmental Law Center
4444 Second Avenue
Detroit, Michigan 48201
nicholas.leonard@glelc.org

Michael Bueno
GreenLatinos
1203 K Street NW, Suite 355
Washington, DC 20005
michaelbueno@greenlatinos.org

Samantha Guerrero
Idaho Organization of Resource Councils
910 W Main Street, Suite 244
Boise, Idaho 83702
sguerrero@iorcinfo.org

Ava Auen-Ryan
Iowa Citizens for Community Improvement
2001 Forest Avenue
Des Moines, Iowa 50311
ava@iowacci.org

Robert Martin
Johns Hopkins Center for a Livable Future
111 Market Place, Suite 840
Baltimore, Maryland 21202
rmarti57@jhu.edu

Amanda Koehler
Land Stewardship Project
821 E 35th Street, Suite 200
Minneapolis, Minnesota 55407
akoehler@landstewardshipproject.org

Julia Jordan
Leadership Counsel for Justice & Accountability
2210 San Joaquin St.
Fresno, California 93721
jjordan@leadershipcounsel.org

Tim Gibbons
Missouri Rural Crisis Center
1906 Monroe Street
Columbia, Missouri 65201
timgibbons@morural.org

Nacema Muhammad
North Carolina Environmental Justice Network
PO Box 68
Rocky Mount, North Carolina 27802
nacema1951@gmail.com

Martin Dagoberto
Northeast Organic Farming Association, Massachusetts Chapter
411 Sheldon Road
Barre, Massachusetts 01005
marty@nofamass.org

Alexis Baden-Mayer
Organic Consumers Association
6771 South Silver Hill Drive
Finland, Minnesota 55603
alexis@organicconsumers.org

Aaron Isherwood
Sierra Club
2101 Webster Street, Suite 1300
Oakland, California 94612
aaron.isherwood@sierraclub.org

Sherri Dugger
Socially Responsible Agricultural Project
1120 Washington Avenue, Suite 200
Golden, Colorado 80401
sherrid@sraproject.org

Message

From: Maher, Karen [Maher.Karen@epa.gov]
Sent: 6/15/2018 9:12:15 PM
To: Wheeler, Andrew [wheeler.andrew@epa.gov]; Jackson, Ryan [jackson.ryan@epa.gov]; Wooden-Aguilar, Helena [Wooden-Aguilar.Helena@epa.gov]
CC: Bailey, KevinJ [Bailey.KevinJ@epa.gov]; Brennan, Thomas [Brennan.Thomas@epa.gov]; Benjamin-Sirmons, Denise [Benjamin-Sirmons.Denise@epa.gov]; Bolen, Brittany [bolen.brittany@epa.gov]; Campbell, Jennie [Campbell.Jennie@epa.gov]; Etzel, Ruth [Etzel.Ruth@epa.gov]; Firestone, Michael [Firestone.Michael@epa.gov]; Grantham, Nancy [Grantham.Nancy@epa.gov]; Hope, Brian [Hope.Brian@epa.gov]; Johnston, Khanna [Johnston.Khanna@epa.gov]; Kime, Robin [Kime.Robin@epa.gov]; Lesperance, Twanna [Lesperance.Twanna@epa.gov]; McCluney, Lance [McCluney.Lance@epa.gov]; McIlwain, Serena [McIlwain.Serena@epa.gov]; Richardson, RobinH [Richardson.RobinH@epa.gov]; Rogers, JoanB [Rogers.JoanB@epa.gov]; Simons, Vicki [Simons.Vicki@epa.gov]; Stanich, Ted [Stanich.Ted@epa.gov]; Tanner, Lee [Tanner.Lee@epa.gov]; White, Elizabeth [white.elizabeth@epa.gov]; Cortes, Emilio [Cortes.Emilio@epa.gov]; Molina, Michael [molina.michael@epa.gov]; Carroll, Carly [Carroll.Carly@epa.gov]; Burton, Tamika [burton.tamika@epa.gov]; Fonseca, Silvina [Fonseca.Silvina@epa.gov]; Johnson, Laura-S [Johnson.Laura-S@epa.gov]; Eng, Connie [Eng.Connie@epa.gov]; DeBell, Kevin [debell.kevin@epa.gov]; Sauerhage, Maggie [Sauerhage.Maggie@epa.gov]
Subject: AO Staff Offices Weekly Report June 11-15 , 2018
Attachments: AO Staff Offices Weekly Report_ Week of June 11-15 2018 v1.pdf

Colleagues,

Good afternoon, please find the AO Staff Office Weekly Reports for June 11-15, 2018.

Regards,
Karen

Karen J. Maher
Acting Director
Office of Administrative and Executive Services
Office of the Administrator
U.S. Environmental Protection Agency
Office: (202)566-0362
Mobile: (202)253-7886
Maher.karen@epa.gov

AO WEEKLY REPORT (June 11 - 15, 2018)

Office of Civil Rights

HOT TOPICS:

Employment Complaints Resolution (EEO Title VII)

- This chart is an overview of the fiscal year 2018 EEO complaint activity, as of June 13, 2018.

Total FADS issued in FY18 to date	61
Informal Complaints Filed	66
Outstanding Informal Complaints	15
Formal Complaints Filed	38
Pending Accept/Dismiss	7
Outstanding Investigations	22 (completed 2 since last week)
Pending Election for FAD or Hearing	5
FADs Pending Completion by OCR	12 (no change from last week) 7- are anticipated to be timely completed; 5 -are untimely

- Affirmative Employment**

EEOC Compliance Letter – The week of May 30, OCR reported about EEOC’s January 31 letter to EPA which identified several deficiencies in the Agency’s civil rights program including: 1) untimely investigations, 2) untimely Issuance of Final Agency Decisions (FADs) of the Merits, 3) low ADR participation rate during pre-complaint stage, 4) lack of applicant flow data, 5) tracking recruitment efforts back to identified potential barriers. **Update:** OARM AA agreed to work with OCR on this issue. OCR to prepare issue papers for discussion and set up meeting and concurrence track for completion.

- Reasonable Accommodations (RA)**

As of June 8, 2018, EPA has processed or is processing 336 reasonable accommodation requests during FY2018. There are 61 pending requests at this time as of Friday, June 8. As mentioned in previous reports, OCR has seen an increase in RA’s compared to this time last year. Several of the requests are linked to facilities (e.g., filters for overhead lights) and desk adjustments (e.g., stand up desks) that do not require a determination of disability for management to approve. We are developing an issue paper to discuss the trends and to recommend ways that manage accommodations that may be provided outside of the “formal” RA process managed by OCR.

AO WEEKLY REPORT (June 11 - 15, 2018)

Office of Civil Rights (Continued)

UPCOMING MAJOR DECISIONS:

- OCR will be developing a Civil Rights collateral duty strategy and action plan that will impact all civil rights collateral duty personnel across EPA. The strategy will be designed to streamline the timing and process of selections, standardize roles and responsibilities, and set clear guidelines for performance, accountability, and management's role in supporting these functions. The strategy will include the following groups:
 - Special Emphasis Program Managers
 - Local Area Reasonable Accommodations Coordinators
 - Equal Employment Opportunity Counselors
 - Final Agency Decision Writers (**New area**)

Office of Homeland Security

HOT ISSUE:

- (U//FOUO)

UPCOMING MAJOR DECISIONS:

- (U//FOUO)

UPCOMING EVENTS AND PAST WEEK ACCOMPLISHMENTS:

- (U//FOUO) On June 12, 2018, the Acting AA for OHS and RA from Region 2 participated in the Recovery Support Function Leadership Group (RSFLG) meeting at FEMA.
- (U//FOUO) On June 14, 2018, OHS Policy Team will represent EPA at the Interagency Biorisk Management Working Group, Committee on Homeland and National Security, White House Office of Science and technology Policy (OSTP). Discussion topics will include status of interagency recommendations on biosafety and biosecurity.

Office of Children's Health Protection

HOT ISSUES:

OCHP is working with *President's Task Force on Environmental Health Risks and Safety Risks to Children* partners at HHS, HUD and OMB, to revise the draft **Federal Strategy to Reduce Childhood Lead Exposures and Associated Health Impacts** based upon the review comments from the OMB and other federal agencies.

AO WEEKLY REPORT (June 11 - 15, 2018)

Office of Children's Health Protection (Continued)

WEEKLY ACCOMPLISHMENTS:

Assistance to OPPT in their Development of the Tier 1 regulation Residential Dust-Lead Hazard Standards & Definition of Lead-Based Paint

As an active member of the Agency's ADP workgroup for the Tier 1 regulation *Residential Dust-Lead Hazard Standards & Definition of Lead-Based Paint* (SAN 5488), OCHP has provided technical support in the evaluation of the current dust-lead hazard standards (DLHS) for the development of a proposed rulemaking to lower the DLHS. Last week, OCHP provided its concurrence with comment on the Expedited Final Agency Review for the proposed rulemaking, and commended OPPT for improving the protection of children from harmful lead exposures.

HR PERSONNEL ACTIONS: None

UPCOMING EVENTS: None

UPCOMING TRAVEL:

International Conference on Children's Health, Environment and Safety, June 24-30, Seoul, Republic of Korea

Dr. Ruth Etzel is invited Plenary Speaker and is organizing an Ignite session at the International Conference on Children's Health, Environment and Safety in Seoul, Republic of Korea. This is an international meeting that occurs every three years. This is the first time it is being hosted in Asia.
Attendee: Ruth Etzel

Conference of the International Society for Environmental Epidemiology and International Society of Exposure Science I-Asia Chapter, June 22-23, Taipei, Taiwan

Dr. Ruth Etzel will deliver a keynote speech at the Conference of the International Society for Environmental Epidemiology and International Society of Exposure Science I-Asia Chapter and participate in the National Institute of Environmental Health Sciences program review. She also will meet with Dr. Leon Guo and OITA staff to finalize a set of recommended next steps that will be discussed with Taiwan Premier William Lai during Principal Deputy Assistant Administrator Jane Nishida's July visit to Taipei.
Attendee: Ruth Etzel

AO WEEKLY REPORT (June 11 - 15, 2018)

Office of Public Engagement and Environmental Education

HOT ISSUES:

United Egg Producers (UEP) 2018 Future Leaders Meeting

On June 12, 2018, The Office of Public Engagement supported a meeting with United Egg Producers Future Leaders. This group represents 50% of the egg production market in America. Andrew Wheeler, Deputy Administrator, gave opening remarks and laid the groundwork for the discussion on Waters of the U.S., certainty around permit timelines, CERCLA/EPCRA and air emissions from animal waste, Renewable Fuel Standard, the National Air Emissions Monitoring Study (NAEMS)/emissions factors, and agency implementation of LEAN. Most of the questions/comments raised were about status and future of NAEMS, the evolution of production and manure handling systems among the layer industry. As a follow-up to this meeting EPA will send UEP list of current Regional Ag Advisors.

Applications for Environmental Education (EE) Grants and Awards Under Review

OEE and Regional EE Coordinators are working with reviewers from within EPA and through federal partners on the Agency's grants and awards program. Most regions have started the second stage of reviews to select grant recipients. The applications for the President's Environmental Youth Award and the Presidential Innovation Award for Environmental Educators are currently under consideration. Finalists for both awards and grants will be later this month. OEE requested that all regions send us the grant selections by June 22, 2018.

Office of Small & Disadvantaged Business Utilization

HOT ISSUES

- ❖ **Small Business Goal Achievements:** The Agency-wide small business goal achievements for FY 2018 to date, are as follows:

Overall Agency Goal Achievements Based on the Federal Procurement Data System					
Quarter	SB (39%)	SDB (5%)	WOSB (5%)	HUBZone (3%)	SDVOSB (3%)
1 st Quarter	51.30%	14.30%	8.70%	1.20%	4.10%
2 nd Quarter	46.91%	17.46%	6.79%	0.63%	6.17%
3 rd Quarter as of 6/8/18	43.74%	14.80%	5.60%	.60%	5.50%

AO WEEKLY REPORT (June 11 - 15, 2018)

Office of Small & Disadvantaged Business Utilization (Continued)

UPCOMING EVENTS:

- ❖ **Outreach Event:** OSDBU has been invited to participate in the National 8(a) Association American Express Summit that will be held on June 26, 2018. OSDBU will assist in the group mentoring and one-on-one business matchmaking sessions.

THIS WEEK'S ACCOMPLISHMENTS:

- ❖ **Congressional Hearing:** OSDBU attended a House Small Business Committee Hearing this week on the impact of Category Management on Small Businesses. The hearing follows an industry Roundtable that OSDBU was invited to participate in together with two other OSDBU Directors and OMB's Office of Federal Procurement Policy.
- ❖ **Outreach Events:**
 - OSDBU received an award on June 12, 2018, for exceeding the SBA Fiscal Year 2017 Service-Disabled Veteran Owned Small Business goal. The award was presented at the Veterans Entrepreneur Training Symposium.
 - On June 13, 2018, OSDBU participated on a panel for an outreach event at Region 3. OSDBU's David Allen served on a panel addressing how to do business with the federal government. The event included breakout sessions and networking opportunities.

Office of Administrative and Executive Services

HOT ISSUES:

- **HR PERSONNEL ACTIONS:**
 - Non-Career – 3
 - Career – 4
 - On-board – 0
 - Departures – 1
- AO requesting CORs review all contracts funded with (17/18) funds for possible de-obligation. Contracts not fully expended by September 30, 2018, should be de-obligated now.
- Received Questions for the Record from SAC Chairman Lisa Murkowski, for Administrator Pruitt FY 19 Budget Proposal for the Environmental Protection Agency, May 16, 2018 testimony. OCIR and OCFO working to assign NPM responsibility for answering.

AO WEEKLY REPORT (June 11 - 15, 2018)

Office of Administrative and Executive Services (Continued)

- AO sweeping all expiring funds (17/18) Friday of this week.
- Completed the review and analysis of the AO travel mission measure. Below is a break out by office of outstanding travel authorizations for May.

Month: May					
AO Office	< 6 days	6 – 15 days	16 – 30 days	> 30 days	Total
IO	1	7			8
OAES					0
OCHP					0
OCIR	1				1
OCR					0
OEX					0
OHS	2	1			3
OP		1			1
OPA	1				1
OPEEE					0
OSDBU		1			1
SAB	1				1
Total	6	10	0	0	16
Timeframe = how long travel voucher has been open as of this month.					

UPCOMING EVENTS:

<u>Due Date</u>	<u>Description</u>	<u>POC</u>
June 18-19, 2018	One Drive Training	James Howard
June 19-21, 2018	RTP SSC Site Visit. One-on-one retirement counseling sessions will be offered	Brian Twillman
June 22, 2018	Deadline to receive funding recommendations with expiring and no-year funds for OGD	Lance McCluney
June 30, 2018	Final Date for any changes or modifications to be made to the FY 2018 PARS performance plans.	Brian Twillman & Melissa Johnson

AO WEEKLY REPORT (June 11 - 15, 2018)

Office of Administrative and Executive Services (Continued)

<u>Due Date</u>	<u>Description</u>	<u>POC</u>
June 29, 2018	Last day for new commitments with expiring FY 2017/2018 funds	Lance McCluney
June 29, 2018	<i>For headquarters only</i> , last day to submit to OAM procurement packages/requests using expiring FY 2017/2018 funds that must be processed by September 30, 2018. Packages with non-expiring/NOA funds will be processed on a first-come, first-served basis	Lance McCluney
July 6, 2018	Last day for Interagency Shared Service Center (IASSC) East and West to receive complete funding packages using expiring funds and other urgent projects	Lance McCluney
July 6, 2018	Last day for NPMs to reprogram BFY 2018/2019 funds and BFY 2018 no-year funds to the Regions.	Lance McCluney
August 3, 2018	FY 2018 Assurance Letters due from program offices.	Lance McCluney & Michael Benton
August 23, 2018	OB begins weekly sweeps of available expiring funds balances above \$5,000 at the RPIO level in Compass.	

ACCOMPLISHMENTS:

- Final reminder sent to all AO employees about the 2018 Federal Employee Viewpoint Survey (FEVS) and the opportunity to complete this sometime over the next week as the deadline was 11:59 p.m. on June 12, 2018. Eligible respondents are permanent career employees who were onboard in AO back on October 28, 2017.
- OAES coordinated four Stress Management sessions that ended up being offered to all AO employees on June 13 and 14, 2018. These sessions were offered as part of the EPA Leaders and Learners Mentoring Program's Round 5 training program's curriculum.
- All interested AO employees have received follow-up information about the upcoming RTP Shared Service Center's visit to AO/ORD/OCFO on June 19-21. During this visit, a two-hour retirement overview plenary session will be offered along with individual counseling sessions to employees who are planning to retire within the next two years.

AO WEEKLY REPORT (June 11 - 15, 2018)

Office of the Executive Secretariat

ISSUE MAIL TRENDS:

- New Issue Email Campaign(s):
 - Sewage Blending – Don’t Allow Where We Swim – TBD – 14,652
- Highest volume issue email campaigns:
 1. Stop Your Assaults on the Environment – 21,339; Total 77,224
 2. Sewage Blending – Don’t Allow Where We Swim – 14,652; Total 14,562
 3. Renewable Fuel Standard – Support & Don’t Expand – 1,481; Total 14,177
 4. Methylene Chloride – Ban in Paint Stripper – 1,332; Total 17,799
 5. Strong Science – Extend Comment Period – 1,042; Total 26,973
 6. Neonicotinoid Pesticides – Protect Pollinators – 655; Total 24,623
 7. PFOA/PFOS Reports – Release – 438; Total 25,598
 8. Factory Farm Pollution – Protect Water – 268; Total 834
 9. CAFE Standards – No to Mid-Term Review – 123; Total 336,538
 10. Clean Power Plan – Support – 102; Total 311,741

PAST WEEK ACCOMPLISHMENTS/STATISTICS (Week of 5/27-6/2):

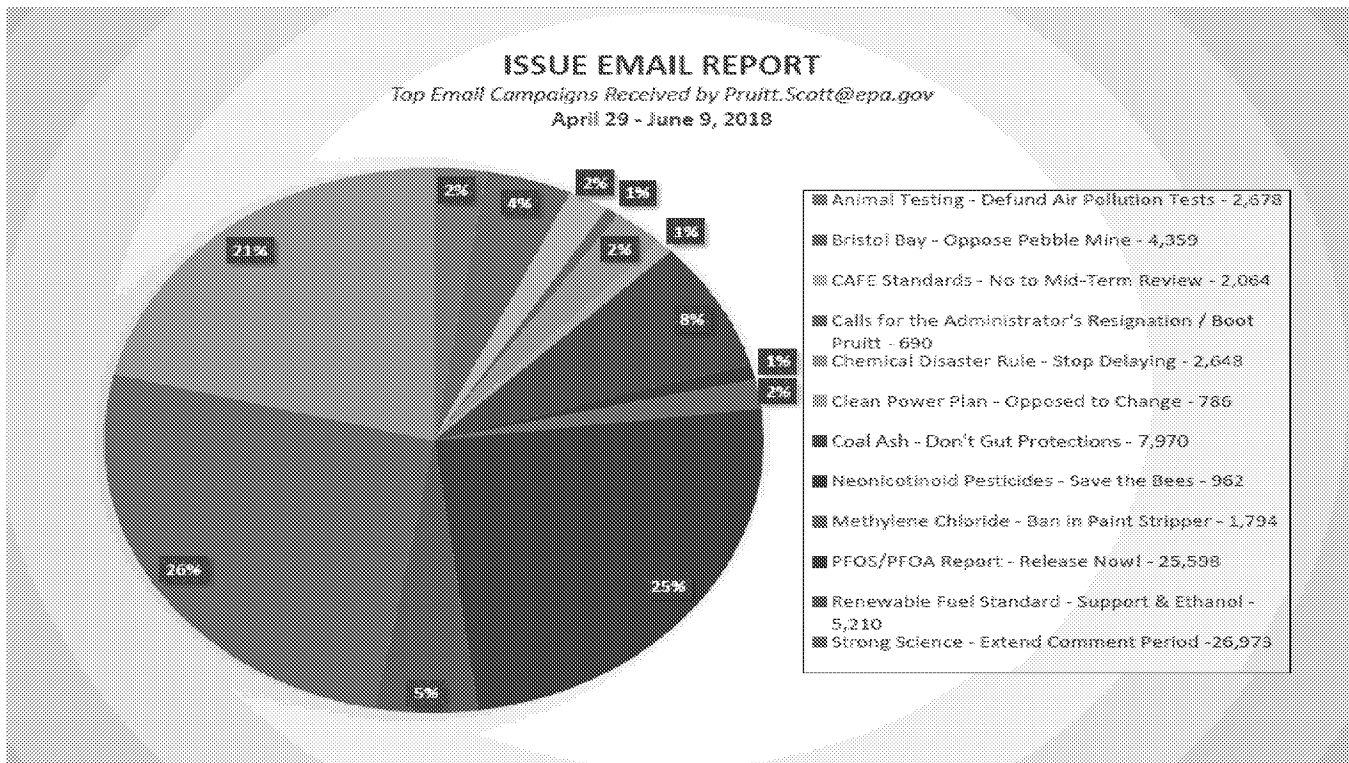
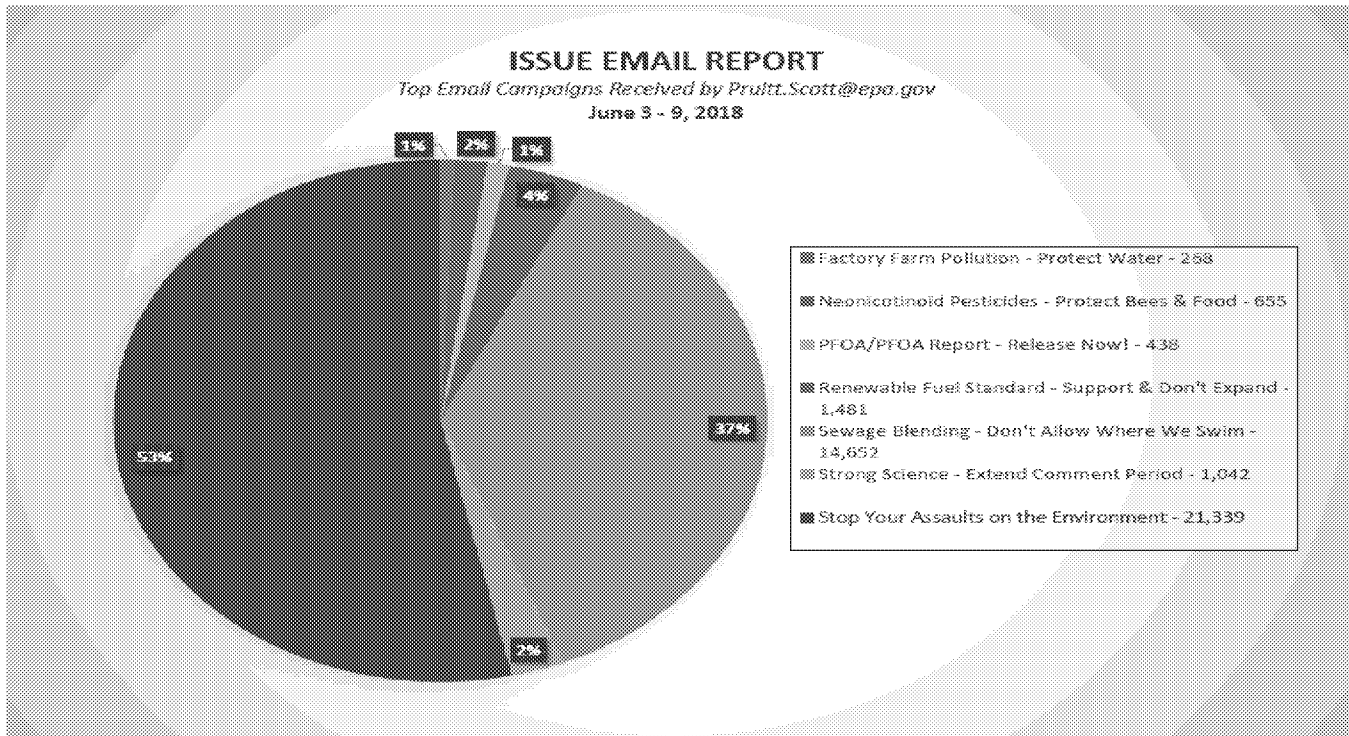
- Issue Emails (Incoming): Week 41,857; YTD 670,037; Total 1,627,938
 - FOIA data unavailable due to pending upgrade.

CORRESPONDENCE:

- Executive Controlled Correspondence: 124 new; 114 closed; 216 overdue
- Correspondence Timeliness
 - On-time Closure Rate: OEX – 53 percent (62 out of 114 closures); OCIR – 35 percent (6 out of 17 closures)
 - Turnaround Times: OEX – 12.47 days; OCIR – 44.44 days
- Overdue Assignments – Highest Number by Office
 - OPA-88; OAR-26; OCIR-24; OCSPP-19; AO-IO-12; OGC-10
- White House Casework Referrals: 0 Overdue

AO WEEKLY REPORT (June 11 - 15, 2018)

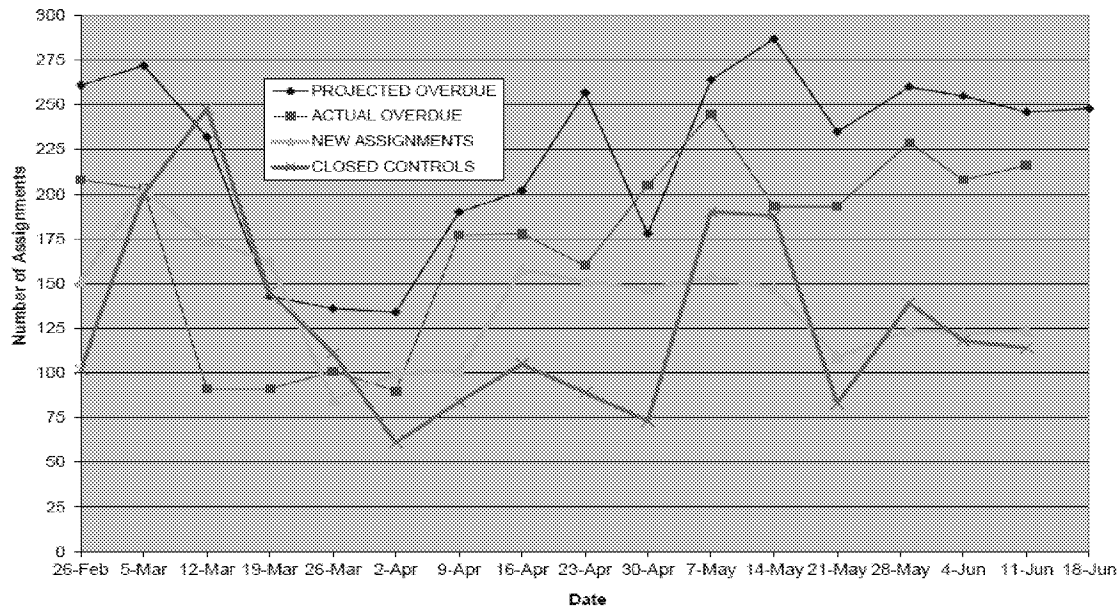
Office of the Executive Secretariat (Continued)



AO WEEKLY REPORT (June 11 - 15, 2018)

Office of the Executive Secretariat (Continued)

EXECUTIVE CORRESPONDENCE STATUS REPORT
(AD- and DA-addressed Correspondence)
June 11, 2018



Science Advisory Board

HOT ISSUES:

Chartered Science Advisory Board (SAB) Meeting

Key Message: The Science Advisory Board met on May 31-June 1, 2018, and identified 6 major planned actions on which they wish to provide advice and comments on the adequacy of the scientific and technical basis of the actions. The SAB chairman will send three letters to the Administrator Pruitt informing him of the Board's decision to provide advice on 3 actions in the Spring 2017 Regulatory Agenda, 2 actions Fall 2017 Regulatory Agenda and *Strengthening Transparency in Regulatory Science* in the coming weeks. The planned actions include reviews of the Clean Power Plan, new source performance standards for oil and gas sector, greenhouse gases emissions from stationary electric generating units, and the mid-term evaluation of light duty vehicles.

AO WEEKLY REPORT (June 11 - 15, 2018)

Science Advisory Board (Continued)

UPCOMING EVENTS:

Membership: CASAC Public Comment Period for FY19 Nominations Open Closes July 2, 2018

Key Message: The List of Candidates for FY19 CASAC Membership was posted on the CASAC website for public comment on June 11, 2018. The public comment period will be open until July 2, 2018. Information on how to respond is located on the CASAC Webpage, under “Public Input on Membership”: <http://epa.gov/casac>

Briefings will be scheduled with Dr. Yamada after the public comment period closes and comments are evaluated to present options for the Administrator’s consideration in making CASAC appointments.

SAB Screening Review of the Regulatory Agenda: Proposed Action Descriptions and SAB Workgroup

Key Message: The Office of Policy identified the major planned actions in the Spring 2018 semi-annual regulatory agenda on May 31, 2018. SAB Staff will initiate the standard protocol to review the regulatory agenda by requesting descriptions of the planned actions from EPA program offices and convene a Work Group of SAB members to review the descriptions provided. The Work Group then may decide to develop recommendations on whether the planned actions merit further review by the SAB. The SAB will discuss the Work Group recommendations at a future meeting of the chartered SAB. The Spring 2018 semi-annual Regulatory agenda was published by OMB on May 9, 2018.

Public Meeting: SAB CAAC-ETBE/tBA Panel Teleconference Held June 6, 2018

Key Message: The SAB Chemical Assessment Advisory Committee (CAAC) augmented for ETBE and tBA Panel held a public teleconference June 6th. The purpose of the teleconference was to continue deliberations on the panel’s draft report to the Agency’s request for SAB Peer Review of the documents: Toxicological Review for Ethyl Tertiary Butyl Ether (ETBE) (External Review Draft, dated June 2017) and Toxicological Review of tert-Butyl Alcohol (tert-butanol or tBA) (External Review Draft, dated June 2017). The panel will now revise their draft report in preparation for quality review by the chartered SAB members.

SAB Committee Membership for FY19 Process Begins

Key Message: A Federal Register Notice (FRN) is being prepared for publication requesting nominations of qualified candidates to serve on the SAB and four SAB standing Committees. The SAB provides independent scientifically sound advice and peer review to the Administrator on a range of scientific and technical matters to inform Agency policy decisions. Candidates may submit their nomination on SAB’s website. Names and biosketches of qualified candidates will be posted on the website. The public will be requested to provide relevant information or other documentation on nominees that the SAB Staff Office should consider in evaluating candidates. All nominations will be evaluated. The FRN will request nominations by 30 days after the publication date. The SAB would

AO WEEKLY REPORT (June 11 - 15, 2018)

Science Advisory Board (Continued)

greatly appreciate assistance in sharing the solicitation once published. Briefings will be scheduled to discuss timelines, process, and selections throughout the next several months. Administrator will select members after nominations have been evaluated.

Public Meeting: CASAC Secondary NAAQS Review Panel for NO_x and SO_x (tentative Sept 5-6, 2018)

Key Message: A public meeting of the Clean Air Scientific Advisory Committee (CASAC) Secondary National Ambient Air Quality Standards (NAAQS) Review Panel for Oxides of Nitrogen and Sulfur (NO_x and SO_x) is being planned tentatively for September 5-6, 2018, in Research Triangle Park, North Carolina. The purpose of the meeting is to conduct a peer review of two EPA documents developed as part of the periodic review of the secondary NAAQS for oxides of nitrogen and sulfur. The panel will review two documents: (1) the second draft of EPA's NO_x/SO_x/PM Integrated Science Assessment-Ecological Criteria, and (2) EPA's Risk and Exposure Assessment Planning Document for the NO_x/SO_x/PM Secondary NAAQS. The Panel previously met by public teleconference on December 1, 2015, and February 29, 2016, to review EPA's Integrated Review Plan for the NO_x/SO_x secondary NAAQS, and also at a face-to-face meeting on May 24-25, 2017, as well as teleconference on August 31, 2017, to review the first draft of EPA's NO_x/SO_x/PM Integrated Science Assessment-Ecological Criteria.

PAST WEEK ACCOMPLISHMENTS:

Membership: SAB Standing Committees for FY 2018

Key Message: SABSO received approval for submittal of FY18 membership packages for six SAB standing committees on May 29th. SABSO is still awaiting approval for one more package (SAB CAAC). Final letters were forwarded through CMS for the Administrator's signature. Final membership reflects the Administrator's new policy directive and guidance received during briefings to senior management for all seven standing committees.

Chartered Science Advisory Board (SAB) Meeting held May 31-June 1, 2018

Key Message: The Science Advisory Board met last week on May 31-June 1, 2018. The Board identified major planned actions on the Spring and Fall 2017 regulatory agendas, including the proposed rule, *Strengthening Transparency in Regulatory Science*, they wish to review, provide advice and comments to the Administrator. The Board will send letters to the Administrator listing the actions initiating a discussions on timelines to complete the reviews. The Board voted to finalize review on the risk and technology review for NESHAPs (National Emissions Standards for Hazardous Air Pollutants), received briefings on the agency's efforts on the Lead Task Force, PFAS (perfluoroalkyl substances), and recent updates to the IRIS program. Twenty-one public commenters registered prior to the deadline and spoke on the EPA Planned

AO WEEKLY REPORT (June 11 - 15, 2018)

Science Advisory Board (Continued)

Actions agenda. Written statements and public comments are posted on the SAB website. OPA attended the meeting and coordinated press. The SAB Staff Office received hundreds of requests to for the public call in information to listen in remotely as well as information requests to attend the meeting. Meeting materials were posted on the SAB website at:

<https://yosemite.epa.gov/sab/sabproduct.nsf//MeetingCalBOARD/7D239353BCECF85B852582600058B716?OpenDocument>

Message

From: Scott Yager [syager@beef.org]
Sent: 12/18/2018 9:35:39 PM
To: Wheeler, Andrew [wheeler.andrew@epa.gov]; Breen, Barry [Breen.Barry@epa.gov]; Cook, Steven [cook.steven@epa.gov]; Jennings, Kim [Jennings.Kim@epa.gov]; Subramanian, Hema [Subramanian.Hema@epa.gov]; Fotouhi, David [Fotouhi.David@epa.gov]
CC: Mary-Thomas Hart [mhart@beef.org]
Subject: NCBA comments on proposed EPCRA FARM Act interpretation
Attachments: NCBA2018EPCRACommentsAndSuppDocs_12-14-18.pdf

Acting Administrator Wheeler et al.,

Please find attached the comments of the National Cattlemen's Beef Association and undersigned cattle associations supporting the "*Amendment to Emergency Release Notification Regulations on Reporting Exemption for Air Emissions from Animal Waste at Farms; Emergency Planning and Community Right-to-Know Act.*" These comments were electronically submitted to the docket (EPA-HQ-OLEM-2018-0318) on December 14, 2018.

Thank you for your time and consideration of our comments.

Scott Yager
Chief Environmental Counsel
Government Affairs
National Cattlemen's Beef Association
Center for Public Policy
The Pennsylvania Building
1275 Pennsylvania Ave, NW Suite 801
Washington, DC 20004-1701
(202) 347-0228 | syager@beef.org





National Cattlemen's
Beef Association

December 14, 2018

Docket No. EPA-HQ-OLEM-2018-0318-0001
Submitted via *Regulations.gov*

**Comments on Emergency Release Notification Regulations: Reporting for Air Emissions from
Animal Waste at Farms; Emergency Planning and Community Right-to-Know Act**

The National Cattlemen's Beef Association (NCBA) and the undersigned cattle associations appreciate the opportunity to comment in response to the U.S. Environmental Protection Agency's (EPA or the Agency) proposal to codify the effect of recently-passed legislation on notification requirements for animal waste from farms under the Emergency Planning and Community Right-to-Know Act (EPCRA) Section 304. NCBA is the largest and oldest national trade association representing American cattle producers, working to advance the economic, political, and social interests of its producer-members and to be an advocate for the cattle industry's policy positions. NCBA strongly supports the EPA's proposal and recommends adopting this proposal as a final rule.

NCBA members are responsible environmental stewards who manage the land, air, and water that are fundamental to sustaining our environment. We recognize an environmental stewardship code and have adopted policy which states that the NCBA "shall not be compelled to defend anyone in the beef cattle industry who has clearly acted to abuse grazing, water, or air resources."¹ NCBA promotes our industry's environmental champions through the Environmental Stewardship Awards Program, recognizing cattle producers who go above and beyond the call of duty to improve our country's natural resources.² Cattle producers depend on clean air and water to raise livestock. They sustain the land to grow grasses on which cattle forage in turn maintaining, and oftentimes restoring, areas that are critical to wildlife. Maintaining our natural resources is not only a necessity to sustain a beef cattle operation, it's a way of life for the farm and ranch families entrusted with managing over one-third of America's land mass.

NCBA supports EPA's proposal and encourages the Agency to clarify that this proposal does not create a new administrative exemption from the law, but rather codifies the effect of the statutory exemption in

¹ National Cattlemen's Beef Association, 2018 Policy Book, Property Rights and Environmental Management Policy 1.1. Livestock Production and Resource Stewardship.

² See generally, <https://www.environmentalstewardship.org/>.



the recently enacted FARM Act. The characterization by EPA of the proposal “to add the reporting exemption” may create the false impression that EPA is creating a new regulatory exemption using its discretionary rulemaking authority. EPA utilized its discretionary rulemaking authority to promulgate the CERCLA/EPCRA Administrative Reporting Exemption for Air Releases of Hazardous Substances from Animal Waste (the 2008 Rule) which was ultimately vacated by the D.C. Circuit.³ Here, by contrast, EPA is not exercising its discretion to create a new administrative exemption. Rather, the Agency is simply harmonizing its EPCRA regulations with the FARM Act. The FARM Act, as codified in law by the U.S. Congress, effectuated the Agency’s proposed change.

Had EPA chosen to take no regulatory action, the outcome would be the same – the FARM Act explicitly exempts notification requirements for air emissions from certain farms under Section 103 of the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA), in turn foreclosing notification requirements under EPCRA section 304.⁴ To be clear, EPA was not required by the Administrative Procedure Act to conduct this action in the form of a notice-and-comment rulemaking.⁵ EPA proffered this interpretation as such in the interest of good governance; the rulemaking comment period provides transparency to the general public and creates an opportunity for interested stakeholders to give input. While NCBA acknowledges that EPA is under no legal obligation to conduct a notice-and-comment rulemaking, we nonetheless appreciate the transparency of this action and the opportunity to provide our input and feedback.

The prospect of reporting manure emissions under EPCRA is untenable for beef cattle producers and potentially exposes them to liability for failure to report. The expectation created by the D.C. Circuit’s mandate to vacate the 2008 Rule presupposes a world in which reporting compliance is readily-achievable by all cattle producers. As our comments lay out in detail, this is far from the truth. **Section I** details the data and methodology gap which makes it impossible for all cattle producers to comply with the mandate. Small cattle producers will be harmed the most due to the difficulty of navigating the complexities of the EPCRA reporting obligation and, more importantly, due to the lack of data and methodologies to calculate emissions from pasture-based operations. The likelihood of beef cattle producers completing these reports with a high degree of certainty and accuracy is extremely low. **Section II** examines recent efforts by NCBA, and other notable agricultural associations, to collaborate with the national association representing state and local emergency responders and their committees (NASTTPO) to satisfy their

³ CERCLA/EPCRA Administrative Reporting Exemption for Air Releases of Hazardous Substances From Animal Waste at Farms, 73 Fed. Reg. 76,948, 76,960 (Dec. 18, 2008) (codified at 40 C.F.R. pt. 302 and pt. 355).

⁴ 42 U.S. Code § 11004(a).

⁵ 5 U.S. Code § 553(b)(B).

informational needs. Since the D.C. Circuit’s decision, NASTTPO has publicly stated that EPCRA air reports for animal waste, *Waterkeeper Alliance v. EPA*, 853 F.3d 527 (2017) on farms have zero benefit to the emergency response community.⁶ As such, NCBA resolves to work with NASTTPO to achieve the goals of emergency responders by facilitating a collaborative dialogue between American agricultural producers and emergency responders. And finally, **Section III** analyzes EPA’s proposal and determines that it is not only reasonable, but also required by congressional action, legislative history, and prior agency action.

I. Background

Cattle feeding operations with over 1,000 head are designated as “large” Concentrated Animal Feeding Operations (CAFOs) and, as such, were required to submit EPCRA reports for air emissions from livestock manure (referred to herein as EPCRA odor reports) pursuant to the 2008 Rule.⁷ NCBA submitted robust comments in support of the exemptions contained in the Agency’s the 2008 Rule. Those comments are enclosed.⁸ In 2017, the U.S. Court of Appeals for the D.C. Circuit issued a judgment that vacated the 2008 Rule, thereby subjecting all cattle operations, not just the largest, to CERCLA and EPCRA reporting requirements.⁹ On March 23, 2018, the President signed into law the Consolidated Appropriations Act of 2018 which included Division S Title XI (the Fair Agricultural Reporting Method Act, or the FARM Act), mandating an exemption from CERCLA for the reporting of air emissions from animal waste at farms. Simply put, the FARM Act explicitly exempts air emissions from animal waste at farms from the CERCLA component of the D.C. Circuit decision. On May 2, 2018, the Court issued its mandate, formally vacating the 2008 rule. In response to passage of the FARM Act, the EPA published a direct final rule on August 1, 2018 amending the CERCLA regulations to conform to the new congressional mandate.¹⁰ The current proposal pertains to the effect of the FARM Act on corresponding EPCRA notification requirements. The D.C. Circuit discussed the interconnected nature of CERCLA and EPCRA reported requirements: In drafting the EPCRA reporting requirements, Congress expressly tied them to CERCLA’s. Repeatedly referring back to CERCLA, Congress set two of the three notification provisions in its new state-targeted measure (EPCRA) to require reports whenever the “release [also] requires a

⁶ Letter from Timothy R. Gablehouse, President, National Association of SARA Title III Program Officials, to the Honorable Scott Pruitt, EPA Administrator (June 1, 2017).

⁷ CERCLA/EPCRA Administrative Reporting Exemption for Air Releases of Hazardous Substances From Animal Waste at Farms, 73 Fed. Reg. 76,948, 76,960 (Dec. 18, 2008) (codified at 40 C.F.R. pt. 302 and pt. 355).

⁸ NCBA’s comments are also available online at www.regulations.gov, ID: EPA-HQ-SFUND-2007-0469-0815.

⁹ See generally, *Waterkeeper Alliance v. EPA*, 853 F.3d 527 (2017).

¹⁰ Vacatur Response–CERCLA/EPCRA Administrative Reporting Exemption for Air Releases of Hazardous Substances From Animal Waste at Farms; FARM Act Amendments to CERCLA Release Notification Requirements, 83 Fed. Reg. 37,444 (August 1, 2018) (codified at 40 C.F.R. pt. 302 and pt. 355).

notification under section 103(a) of CERCLA,” In other words, a release that triggers the CERCLA duty also automatically trips the EPCRA reporting requirements in subsections (1) and (3) of § 11004(a). And under subsection (2), the remaining notice provision, even a release that “is not subject to the notification requirements under section 103(a) of CERCLA” requires EPCRA reporting when it “occurs in a manner which would require notification under section 103(a) of CERCLA.” Thus, all of EPCRA’s reporting mandates piggyback on the CERCLA mandates in one form or another.

The D.C. Circuit’s analysis in this regard leads to an obvious conclusion: because EPCRA reporting requirements are seeded in CERCLA’s, releases exempt from CERCLA reporting requirements are automatically exempt from EPCRA reporting requirements.

a. *The science is still sorely lacking.*

Much like the CERCLA reporting requirements, the number of cattle that trigger the reporting threshold for EPCRA is far below the 1,000-head threshold of a large CAFO. This is because the reportable quantities for the key pollutant in question (ammonia) are the same under both reporting schemes. A conservative estimate predicts that cattle operations with as few as 330 head are subject to reporting liability.¹¹ Other research indicates that as few as 208 cattle trigger the reporting requirements.¹² This burden is exceptionally broad due to the nature of CERCLA and EPCRA’s reporting threshold. Unlike other environmental statutes that consider the concentration of a release, CERCLA Section 103(a) and EPCRA Section 304(a) merely consider the amount of release. Lack of a concentration threshold brings thousands of producers into the fold whose emissions are spread over a large land area. Not only does this show the impact the D.C. Circuit decision had on all sectors of the beef cattle industry, but it illustrates the inability of researchers to establish a reliable emission methodology.

The science of emissions estimation on farms is limited in supply and narrow in scope. Scientists fail to agree on an appropriate metric for emissions estimation from farms. A cattle producer taking on the speculative exercise of estimating air emissions from cow manure does nothing more than play a guessing game. The information and metrics currently available – namely worksheets developed by Texas A&M Agrilife Extension and the University of Nebraska-Lincoln to estimate ammonia and hydrogen sulfide emissions – are limited to cattle feeding operations with certain structures subject to climatic conditions present in specific regions of the country.¹³ As for pasture-based producers, there are scant data and no

¹¹ Stowell, R. and Koelsch, R. Ammonia Emissions Estimator, University of Nebraska-Lincoln (2009).

¹² S. Preece, N. Cole, B. Auvermann; Ammonia Emissions from Cattle Feeding Operations, Texas A&M (2012).

¹³ Stowell, Ammonia Emissions Estimator; Preece, Ammonia Emissions from Cattle Feeding Operations.

publicly-available emissions methods to estimate the pounds per day of ammonia or hydrogen sulfide emitted from cow manure in a field. Simply put, pasture-based producers cannot report manure emissions from their operations with any degree of confidence.

The EPA has in the past grossly underestimated the number of agricultural operations that would be impacted by the reporting requirements. Following USDA's 2012 Census on Agriculture (which only includes voluntary surveys completed by 69% of the agricultural industry), our estimate indicates 68,313 beef cattle operations in the United States will be subject to the reporting requirements.¹⁴ For more information, please refer to NCBA's comments regarding the CERCLA Information Collection Request, enclosed.¹⁵

b. At present, reporting requirements confuse farmers and ranchers.

Feedlot operators and, even more so, pasture-based cattle producers continue to struggle with interpreting EPA's regulations to understand what types of releases need to be reported to the government, and how to report that information to the government. The proposed rule clearly delineates the releases that do not need to be reported by farmers and ranchers, providing much needed regulatory certainty to cattle producers across America. In February 2018, Niels Hansen, a third generation Wyoming cattle rancher and member of the NCBA, testified before The U.S. Senate Committee on Environment and Public Works (EPW) regarding the impact of federal environmental regulations on farming and ranching communities. Mr. Hansen testified specifically to the absurdity of requiring ranchers to report air emissions from livestock manure to the government.¹⁶ While livestock producers are relieved to have a codified exemption from CERCLA reporting requirements, confusion still exists as to why local emergency responders need emissions reports, and how such reports will improve response safety.

c. EPCRA reporting requirements needlessly burden small cattle producers.

As the EPA correctly states in the preamble, EPCRA and CERCLA are two separate but interrelated environmental statutes that work together to provide emergency release notifications to federal, state, and local officials. The D.C. Circuit's directive that farms should report all releases including releases from

¹⁴ 2012 USDA Census on Agriculture, Cattle and Calves – Inventory (https://www.agcensus.usda.gov/Publications/2012/Full_Report/Volume_1,_Chapter_1_US/st99_1_012_013.pdf) (Conclusion reached by adding number of farms with over 200 head of “beef cows” with number of farms that have over 200 head of “other cattle.”).

¹⁵ Also available online at www.regulations.gov, ID: EPA-HQ-SFUND-2007-0469-1377.

¹⁶ *The Impact of Federal Environmental Regulations and Policies on American Farming and Ranching Communities: Hearing Before the S. Comm. On Environment and Public Works*, 115th Cong. 2-3 (2018) (statement of Niels Hansen, PH Livestock, member of National Cattlemen's Beef Association).

animals outside of an enclosed structure subjects producers to reporting requirements under both statutes.¹⁷ The Court's decision not only vacated the reporting exemption for AFOs contained in 40 CFR 355.31(g) but also the section 355.31(h) exemption for releases from animals that are not stabled or otherwise confined. The detrimental effect that this additional regulatory burden would impose on cattle producers cannot be overstated, especially as it relates to small producers. The dearth of reliable data coupled with the legal liability for failing to report places our country's cattle producers in a precarious situation.

In March 2018, Todd Mortenson, a member of the NCBA, testified before the U.S. Senate EPW committee.¹⁸ Mr. Mortenson, a cattle rancher and owner of the Mortenson Ranch, spoke to the burdensome aspect of reporting odor emissions under CERCLA, specifically highlighting that the concentration of emissions at his operation is extremely low because the livestock are spread out over 19,000 acres of land.¹⁹ However, neither CERCLA nor EPCRA set concentration thresholds for reporting, thus forcing ranchers to report emissions based on estimated pounds of air emissions. Mr. Mortenson further asserted that reporting is "no simple task".²⁰ In addition to cattle ranching, Mr. Mortenson volunteers with the Hayes volunteer fire department and EMS in Stanley County, South Dakota. Having the knowledge and experience of a first responder, Mr. Mortenson asserted that the receipt of EPCRA odor reports "would in no way improve my ability to do my job as an emergency responder. Rather, like the CERCLA reporting requirements, [EPCRA odor reports] would impose a burdensome paperwork requirement with no environmental or public health benefit."²¹

d. *History shows EPCRA odor reports do not help emergency responders do their job.*

In January 2009, emergency responders across the nation received a flood of EPCRA odor reports from Large CAFOs.²² Contrary to the narrative espoused by groups who pursue increased burdens for farmers and ranchers, the reports have not improved the ability of emergency responders to respond to on-farm emergencies. In rural America, volunteer firefighters and EMTs drop everything at home and respond

¹⁷ See EPA's guidance, CERCLA and EPCRA Reporting Requirements for Air Releases of Hazardous Substances from Animal Waste at Farms, U.S. EPA (<https://www.epa.gov/epcra/cercla-and-epcra-reporting-requirements-air-releases-hazardous-substances-animal-waste-farms>)

¹⁸ *Legislative Hearing on S. 2421, the Fair Agricultural Reporting Method Act: Hearing Before the S. Comm. On Environment and Public Works*, 115th Cong. 2-5 (2018) (statement of Todd Mortenson, Mortenson Ranch, member of National Cattlemen's Beef Association).

¹⁹ *Id* at 2.

²⁰ *Id* at 3.

²¹ *Id* at 4.

²² National Pork Producers Council's and U.S. Poultry & Egg Association's Brief in Support of EPA's Motion to Stay Issuance of Mandate, *Waterkeeper Alliance v. EPA*, 853 F.3d 527 (2017) (No. 09-1017).

immediately when they receive a dispatch. Often, volunteer first responders are also the community members who manage emergency response coordination when a natural disaster strikes. Responders need pertinent information that assists them in protecting communities. However, EPCRA odor reports provide no such assistance. This gratuitous documentation was not utilized by emergency responders and, worse still, acted as an impediment to first responders by creating an additional layer of needless information to be reviewed prior to initiating a response. In the words of Mr. Mortenson, “the receipt of this paperwork would in no way improve my ability to do my job as an emergency responder...Rural emergency response teams are already stretched for time and resources – requiring additional, needless paperwork would only compound this burden.”²³

II. NCBA is working to enhance the dialogue between farmer/ranchers and emergency responders.

NCBA and cattle producers have proactively developed relationships with state and local emergency responders to grow our mutual understanding of what responders need to perform their jobs safely and effectively. Ongoing discussions with Timothy R. Gablehouse, the president of the National Association of Title III Program Officials (NASTTPO), have yielded a clear and resounding message: State Emergency Response Commissions (SERCs) and Local Emergency Planning Committees (LEPCs) do not need ECPRA odor reports to do their jobs. They need relationships with farm operators and collaborative and open dialogue. When emergency responders are called to a farm, they want to quickly identify potential hazards. On-farm assets, like a chlorine tank or anhydrous ammonia tank, are important to identify and assess prior to initiating a response. Requiring responders to flip through pages of EPCRA odor reports is the least efficient way to identify legitimate hazards. Beyond emergency response, local emergency coordinators need to know if farm employees have adequate training to deal with potential emergencies. This valuable information exchange never involves consideration of odor emissions from cow manure.²⁴

a. NASTTPO asserts that LEPCs and first responders do not utilize EPCRA odor reports.

The NASTTPO represents SERCs and LEPCs which receive EPCRA reports. In its opinion regarding the 2008 Rule, the D.C. Circuit justified vacatur of the 2008 rule in part by proclaiming EPCRA odor reports potentially provide *some* regulatory benefit to *someone*, if not the EPA.²⁵ The Court includes an excerpt

²³ *Id.*

²⁴ Letter from Timothy R. Gablehouse, President, National Association of SARA Title III Program Officials, to the Honorable Scott Pruitt, EPA Administrator (June 1, 2017).

²⁵ *Waterkeeper*, 853 F.3d at 15-17.

from NASTTPO's comments on the 2008 Rule, asserting that the record suggests "the potentiality of some real benefits" to NASTTPO.²⁶ To the contrary, NASTTPO indicated in June 2017 that EPCRA odor reports have zero benefit to LEPCs and SERCs.²⁷

NASTTPO's 2017 letter to EPA Administrator Scott Pruitt asserts that EPCRA emergency release reports from farms (primarily regarding ammonia from animal manure management) are "of no particular value to LEPCs and first responders and they are generally ignored because they do not relate to any particular event."²⁸ NASTTPO further asserted that "LEPCs and first responders do not need more generic data. They need information that is locally relevant and upon which they can act." NASTTPO's letter is enclosed. The goals of the LEPCs and first responders can more effectively be achieved through collaborative dialogue with agricultural producers.

b. NCBA, and other notable agricultural organizations, are collaborating with NASTTPO to achieve the informational goals of emergency responders.

In May 2018, representatives from NCBA, the National Pork Producers Council (NPCC), and the U.S. Poultry and Egg Association (USPE) met with Mr. Gablehouse of NASTTPO. Mr. Gablehouse asserted that NASTTPO members do not want or need manure emission reports and that the reports in question are largely unused by emergency responders. This is due to the reports' lack of actionable applicability – emergency responders do not respond to and address manure odors. Simply put, an influx of reports about air emissions from livestock farms does not facilitate emergency responses and thus, does not serve the purposes underlying EPCRA Section 304. By contrast, responders do want reports when it relates to the hazardous release from anhydrous ammonia tanks or chlorine tanks that are located on some farming operations. Mr. Gablehouse explained further that NASTTPO desires to facilitate a collaborative dialogue between emergency responders and farm operators so that responders have what they need prior to an emergency: 1) contact information for farm operators; and 2) knowledge about farm operations, including on-farm assets that could pose a potential threat.

In August 2018, NCBA hosted Mr. Gablehouse at NCBA's 2018 Summer Business Meeting in Denver, Colorado. Mr. Gablehouse addressed a room containing approximately thirty NCBA members regarding his desire to enhance the collaborative dialogue between emergency responders and agricultural producers. NCBA members were generally amenable to Mr. Gablehouse's presentation. In fact, several

²⁶ *Id.*

²⁷ Letter from Timothy R. Gablehouse, President, National Association of SARA Title III Program Officials, to the Honorable Scott Pruitt, EPA Administrator (June 1, 2017).

²⁸ *Id.*

NCBA members disclosed they already have positive relationships with emergency responders in their counties. In fact, some cattle producers are also volunteer firefighters and emergency responders in their respective communities.²⁹ As a result of the meeting with Mr. Gablehouse, NCBA resolved to continue working with NASTTPO to effectuate the goal of enhancing the collaborative dialogue between agricultural producers and emergency responders.

III. NCBA supports EPA’s proposal to codify the effect of the FARM Act on EPCRA notification requirements.

EPA’s proposed amendment to its EPCRA regulations to reflect the statutory exemption established in the FARM Act is well-received and appreciated by the NCBA. Incorporating the FARM Act’s definitions of “animal waste” and “farm” into the ECPRA regulations provides much-needed regulatory clarity to agricultural producers. Clear definitions allow farmers and ranchers to better understand whether a given release should be reported under EPCRA section 304. And most importantly, EPA’s legal justification is grounded in congressional action, legislative history, and prior agency action.

a. Congressional action effectuated the exemption from EPCRA notification requirements.

On March 23, 2018, the President signed into law the Consolidated Appropriations Act of 2018 which included Division S Title XI, the Fair Agricultural Reporting Method Act, or the FARM Act. The FARM Act amended CERCLA by adding language to section 103(e) to exempt air emissions of animal waste at farms from notification requirements of Section 103. Congress provided definitions for “animal waste” and “farm” within the FARM Act that limit the exemption’s scope. In light of the FARM Act’s passage, the EPA had to interpret how this amendment affects EPCRA given the interplay between the two reporting provisions. The Agency should look no further than the D.C. Circuit opinion in *Waterkeeper*, where the Court explains “in drafting the EPCRA reporting requirements, Congress expressly tied them to CERCLA’s...Thus all of EPCRA’s reporting mandates are piggybacked on the CERCLA mandates in one form or another.”³⁰ The Court further resolved that “cutting back on CERCLA reporting requirements had the *automatic effect* [emphasis added] of cutting back on EPCRA reporting and disclosure requirements.”³¹

²⁹ As noted in preceding Section I.c., Todd Mortenson is a cattle rancher as well as a volunteer firefighter and EMS first responder in Stanley County, South Dakota. For further information, see *Legislative Hearing on S. 2421, the Fair Agricultural Reporting Method Act: Hearing Before the S. Comm. On Environment and Public Works*, 115th Cong. 2-5 (2018) (written testimony of Todd Mortenson, Mortenson Ranch, member of National Cattlemen’s Beef Association).

³⁰ *Waterkeeper*, 853 F.3d at 10.

³¹ *Id.*

b. *Legislative history supports EPA's interpretation.*

The Congressional Research Service (CRS) issued two memoranda³² regarding the FARM Act's effect on EPCRA notification requirements, unequivocally concluding the FARM Act exempts releases from reporting under EPCRA section 304(a)(1) and (a)(3). CRS asserts that notification required by section 304(a)(2) is dependent on meeting all three statutory criteria: releases 1) are not federally permitted, 2) are in excess of the reporting quantity, and 3) occur in a manner which would require notification under CERCLA 103(a).³³ CRS further resolves that EPA has historically treated the third statutory criteria, "occurs in a manner", to mean the nature of the release in terms of how a substance enters the environment, *e.g.*, into the air, into water, etc.³⁴ This determination comports with EPA's interpretation as presented in the proposed rule. While CRS failed to make a conclusion regarding the FARM Act's impact on EPCRA reporting requirements, its analysis only allows for one inference. While air releases from animal waste at farms is not subject to federal permitting requirements, and are in excess of the reporting quantity, they do not occur in a manner reportable under CERCLA 103(a).

c. *Prior Agency Action supports this interpretation.*

EPA's proposed interpretation of the FARM Act's effect on EPCRA section 304(a)(2) is not new. One need only look to the analogous CERCLA pesticide application exemption for guidance on how a statutory CERCLA reporting exemption ties back to EPCRA's 304(a)(2) notification requirement. Specifically, the FARM Act is codified in the same section of CERCLA as the longstanding pesticide exemption, section 103(e). The codified exemption for the application of pesticide products provides a framework for EPA's interpretation of the FARM Act's effect on EPCRA reporting. In 1987, EPA interpreted the relationship between CERCLA Section 103(e) and EPCRA Section 304(a) as follows: "The application of a registered pesticide product generally in accordance with its purpose is exempt from section 103(a) notification under section 103(e) of CERCLA. Because such releases are not reportable under section 103(a) of CERCLA, they are also exempt from release reporting under section 304(a) of [EPCRA], and EPA has clarified the release reporting regulations to include this exemption."³⁵ Now that Congress has expanded Section 103(e) to also exempt air emissions from animal waste at farms, it logically follows that such emissions are also exempt from EPCRA release reporting.

³² David M. Bearden, Cong. Research Serv., 7-2390, Fair Agricultural Reporting Method Act/FARM Act (S. 2421) and Supplemental Analysis: Fair Agricultural Reporting Method Act/FARM Act (S. 2421) (2018).

³³ *Id.* at 3.

³⁴ *Id.* at 3-4.

³⁵ 52 Fed. Reg. 13,378, 13,385 (Apr. 22, 1987).

The application of pesticide products registered under the Federal Insecticide, Fungicide, and Rodenticide Act (FIFRA) or handled and stored by an agricultural producer are exempt from CERCLA's notification requirements. Determining whether EPCRA notification requirements apply to the application of those pesticide products requires the satisfaction of all three criteria in section 304(a)(2). Where pesticide products are not federally permitted and exceed the reporting quantity, the analysis turns to whether such releases "occurs in a manner" which would require notification under CERCLA 103(a). The pesticide application exemption is specifically tied to the nature of pesticide chemicals' release into the environment rather than to a given chemical component – pesticides being applied, handled, or stored are exempt. The nature of the pesticides' release, not their chemical makeup, determine reporting requirements. Therefore, releases exempt from CERCLA reporting do not "occur in a manner" reportable under EPCRA. This interpretation does not diminish section 304(a)(2)'s value; the Agency's proposed rule correctly states that chemicals not listed as CERCLA hazardous substances are generally subject to EPCRA reporting under 304(a)(2) if they are listed as EPCRA extremely hazardous substances (EHSs). Pesticides and animal waste at farms are not subject to the 304(a)(2) reporting requirement, even though they release EHS (EHSs), because the type of release is exempt from CERCLA 103, as opposed to such exemptions being included in the hazardous substance list.³⁶

NCBA supports the regulatory text in the proposed rule and offers, for EPA's consideration, alternative regulatory text which achieves the legal effect of the proposed rule while also aligning with prior agency action. Rather than adding the FARM Act language directly into the EPCRA regulations, EPA could instead promulgate a single sentence cross-referencing the FARM Act. Such regulatory text would properly reside in section 355.31 and could read, "Any release from animal waste at a farm that is exempt from reporting under section 103(e) of CERCLA." This is precisely how the pesticide exemption is codified in the EPCRA regulations.³⁷ While the proposed rule is grounded in prior agency action, the alternative regulatory text would align identically with regulatory precedent. Notably, this alternative avoids engendering the false perception that EPA is crafting a new exemption pursuant to the agency's discretionary rulemaking authority.

Conclusion

NCBA appreciates the opportunity to provide comment on this rulemaking proposal. NCBA supports EPA's action and supports finalization of this rule as proposed. To state the obvious: odor emissions from

³⁷ See 40 C.F.R. 355.31(c).

the natural breakdown of livestock manure do not constitute an emergency release pursuant to the CERCLA and EPCRA laws. The EPA, under both the Bush and Obama Administrations, understood this. The association, NASTTPO, that represents the responders who receive the EPCRA reports understand this. And Congress reaffirmed this decree through passage of the FARM Act.

Sincerely,

National Cattlemen's Beef Association

American National CattleWomen

Arkansas Cattlemen's Association

California CattleWomen

Florida Cattlemen's Association

Indiana Beef Cattle Association

Iowa Cattlemen's Association

Kansas Livestock Association

Missouri CattleWomen

Nebraska Cattlemen's Association

North Carolina Cattlemen's Association

Ohio Cattlemen's Association

Oklahoma Cattlemen's Association

Oregon Cattlemen's Association

Public Lands Council

South Dakota Cattlemen's Association

Utah Cattlemen's Association

Washington Cattle Feeders Association

Washington Cattlemen's Association

Wyoming Stockgrower's Association

cc: Andrew Wheeler
Peter Wright
Kim Jennings
Hema Subramanian

Enclosures (8):

NCBA 2017 Comments; Docket ID No. EPA-HQ-SFUND-2007-0469
NCBA 2008 Comments; Docket ID No. EPA-HQ-SFUND-2007-0469
Congressional Testimony; Niels Hansen
Congressional Testimony; Todd Mortenson
Letter from NASSTPO to Administrator Pruitt
CRS Report: *Fair Agricultural Reporting Method Act/FARM Act (S. 2421)*
CRS Report: *Supplemental Analysis: Fair Agricultural Reporting Method Act/FARM Act (S. 2421)*
NPPC, USPEA Brief in Support of EPA Motion to Stay Issuance of Mandate



National Cattlemen's
Beef Association

December 15, 2017

Submitted via www.regulations.gov

Docket No. EPA-HQ-SFUND-2007-0469; FRL-9971-65-OLEM

Comments on Information Collection Request Submitted to OMB for Review and Approval; Continuous Release Reporting Requirements; Reporting Air Releases of Hazardous Substances from Animal Wastes at Farms under CERCLA Section 103

The National Cattlemen's Beef Association (NCBA) appreciates the opportunity to comment in response to the U.S. Environmental Protection Agency's submission of an Information Collection Request (ICR) for animal wastes at farms under CERCLA Section 103. NCBA is the largest and oldest national trade association of American cattle producers, working to advance the economic, political, and social interests of its producer-members and to be an advocate for the cattle industry's policy positions. The Environmental Protection Agency (EPA) solicits input in response to its OMB Information Collection Request. All livestock operations need a method of reporting that is easy to understand and easy to complete. In the ICR, EPA estimates that 44,990 operations will be required to report their ammonia and hydrogen sulfide emissions following the D.C. Circuit's *Waterkeeper* decision.¹ This number is woefully inadequate and vastly underrepresents the universe of producers who will be impacted by these reporting requirements.

Cost and Burden Estimation Inaccuracies

EPA's cost and burden estimation states that 44,900 livestock operations will be impacted by the reporting requirement. However, EPA has provided no reasoning for its conclusion, leaving stakeholders to guess at EPA's determination methodology. This estimation only represents the tip of the iceberg, likely including only the largest operations required to report – but not all operations that are subject to reporting liability. The number of cattle that will trigger the reporting threshold is far below the 1,000-head threshold for a large CAFO – the type of livestock operation routinely regulated by the EPA. Our conservative estimate shows that cattle operations with as few as 330 head will be subject to reporting liability.² Other research indicates that as few as 208 cattle

¹ See generally *Waterkeeper Alliance v. EPA*, 853 F.3d 527 (2017).

² Stowell, R. and Koelsch, R. *Ammonia Emissions Estimator*, University of Nebraska-Lincoln (2009).



will trigger the reporting requirements.³ Not only does this show the impact that this reporting requirement will have on all sectors of the beef industry, but also illustrates the inability of researchers to establish a reliable emission methodology. Following USDA's 2012 Census on Agriculture (which only includes voluntary surveys completed by 69% of the agricultural industry), our estimate indicates 68,313 beef cattle operations in the United States will be subject to reporting requirements.⁴ This number far exceeds EPA's estimation, and cattle are just one of the species subject to this requirement.

Applicability to Pasture-based Operations

In addition to the exclusive consideration of large CAFOs, a primary reason for EPA's inaccurate burden estimation is the agency's failure to include pasture-based operations in its determination. There has been significant uncertainty as to whether pasture-based operations were to be included in the reporting requirements, culminating in EPA including information on their webpage. The recently added Frequently Asked Question provides the following information:

Do farms that have cattle that reside primarily outside of an enclosed structure and graze on pastures, need to comply with reporting releases of hazardous substances from animal wastes under CERCLA section 103?

Yes. EPA considers all contiguous property under common ownership to be a single facility for reporting purposes. For purposes of determining whether you have a reportable release, a person must identify all the sources of hazardous substances releases, identify the quantities that are emitted from each source, and aggregate the quantities released for the facility. In making this determination, farms should include all releases from the facility, including releases from animal waste due to animals that reside primarily outside of an enclosed structure.⁵

³ S. Preece, N. Cole, B. Auvermann; Ammonia Emissions from Cattle Feeding Operations, Texas A&M (2012).

⁴ 2012 USDA Census on Agriculture, Cattle and Calves – Inventory (https://www.agcensus.usda.gov/Publications/2012/Full_Report/Volume_1,_Chapter_1_US/st99_1_012_013.pdf) (Conclusion reached by adding number of farms with over 200 head of “beef cows” with number of farms that have over 200 head of “other cattle.”).

⁵ CERCLA and EPCRA Reporting Requirements for Air Releases of Hazardous Substances from Animal Waste at Farms, U.S. EPA (<https://www.epa.gov/epcra/cercla-and-epcra-reporting-requirements-air-releases-hazardous-substances-animal-waste-farms>)

This statement directly contradicts EPA's burden estimation which, to the best of our knowledge, only considers cattle on feed numbers from the USDA NASS survey. In addition to not including these operations, EPA fails to account for the work that must be done on the producers' behalf to ensure that their emissions are accurately reported.

Burden on the American Public

In addition to considering the burden and costs of such a requirement to livestock producers, EPA should take into consideration the cost and burden that such a requirement will place on the American public. In previous comments, NCBA has outlined the dangers of requiring an estimated 100,000 livestock operations to report low-level, continuous emissions. Such an exercise places tremendous stress on the U.S. Coast Guard's National Response Center, severely limiting their ability to respond to legitimate emergency releases. In a declaration to the D.C. Circuit Court, Dana Tulis, Director of Incident Management and Preparedness for the U.S. Coast Guard, stated that "phone calls have increased from approximately 100-150 calls per day to over 1,000 calls per day" and that "wait times have been up to two hours for calls, many of which require immediate action."⁶ Not only does this make it difficult for other regulated entities to report emergency releases, but it places the American public in danger. True hazardous substance releases pose a threat to the public health and response coordination will become further congested due to the influx of farm reports. This will severely impact the ability of the National Response Center to carry out its job. To be clear, this contravenes the purpose of the reporting requirements and will hurt Americans.

Cost and Burden Estimation Omissions

The April court decision opens the door to a much broader universe of operations becoming subject to these reporting requirements. Take for example, zoos and wildlife refuges that cultivate animals which in aggregate will trigger the ammonia and hydrogen sulfide emissions thresholds. There are currently 170 accredited zoos and wildlife sanctuaries across that country which may now face potential reporting liability.⁷ This does not include operations unaccredited, or recreational hunting

⁶ Tulis Aff. 2 (*Waterkeeper Alliance v. EPA*, 853 F.3d 527 (2017)).

⁷ Currently Accredited Zoos and Aquariums, Association of Zoos and Aquariums (<https://www.aza.org/current-accreditation-list>).

operations. Like pasture-based livestock, there is no adequate research from which these facilities could base a realistic estimation.

The monetary burden calculation should consider all beef operations with over 330 head, including pasture-based operations. Additionally, it should consider the impact of such reporting requirements on other animal operations, including zoos and wildlife refuges.

The Need for a Simplified Reporting Form

If farmers and ranchers are expected to comply with CERCLA reporting requirements, they cannot be expected to do it with the same level of technical analysis used by traditionally regulated industry. NCBA strongly supports the development of a simplified reporting form, to be used by any farmer reporting continuous emissions from manure. A one-page report is adequate to convey the release information required by statute. NCBA has developed a one-page model report that (1) meets all reporting requirements according to the Continuous Release Report Checklist and (2) does not allow regulated entities to submit extraneous information. NCBA encourages EPA to strictly follow the Continuous Release Report Checklist to ensure that operations do not submit extraneous information.⁸ Additionally, any OMB-approved form should be easy to comprehend and complete for someone who does not have training in the technical intricacies of CERCLA. The current OMB-approved form (OMB No. 2050-0086) is overly burdensome and too complicated for most agricultural producers who are on the hook for this requirement. Regardless of the length of the form developed, NCBA urges EPA to include disclaimers related to the applicability of the University of Nebraska-Lincoln research cited on the agency's webpage, the lack of applicability of such research to pasture-based operations, and warnings about the potential release of farm information via Freedom of Information Act (FOIA) requests.

General Applicability of Emissions Research

The report form should indicate that reports based on the available research is quite limited in breadth and scope and therefore will not accurately correspond to every type of livestock operation in the United States that are subject to these requirements.⁹ According to Dr. Rick Stowell, co-

⁸ Checklist of Information Required in Initial and Follow-Up Written Reports, U.S. EPA (https://www.epa.gov/sites/production/files/2015-11/documents/continuous_release_checklist.pdf)

⁹ Stowell, R. and Koelsch, R. Ammonia Emissions Estimator, University of Nebraska-Lincoln (2009).

creator of UNL's Ammonia Estimator Worksheet, "While I can place some confidence in differentiating between a 1,000-head feedlot and a 200-head feedlot, given all of the variability involved on AFOs and in research, I would not place much confidence in saying that a 300-head lot is definitely emitting more NH³ than the neighboring 200-head lot or that we can be certain that either is above or below the threshold."¹⁰ To protect livestock operations who follow the statutory and regulatory reporting requirements to the best of their ability, EPA must include a disclaimer in the report regarding the general applicability of such reporting information.

Applicability of Research to Pasture-based operations

For pasture-based livestock, no research exists quantifying per head ammonia or hydrogen sulfide emissions. However, research does indicate that ammonia emissions differ significantly based on diet and confinement. Requiring pasture-based operations to report using tools provided on EPA's webpage (research that focuses exclusively on grain-fed animals) is inadequate, and will lead to substantially inaccurate reporting. Since pasture-based operations are now required to report, according to EPA's website guidance¹¹, EPA has a duty to develop a methodology for farmers to calculate those emissions, and in the interim, provide ample flexibility in what the agency accepts as a completed report. NCBA urges EPA to include a disclaimer in the report regarding the lack of research on ammonia and hydrogen sulfide emissions of pasture-based animals, which will result in almost guaranteed inaccuracy of reports filed by pasture-based operations.

The Legal Duty for Government to Protect Farm Location Information

Farm location information, often synonymous to residential information, can be protected under Exemption 6 of the Freedom of Information Act (FOIA).¹² Personal privacy interests are generally protected by FOIA, with Exemption 6 protecting "personnel and medical files and similar files" when the disclosure of such information "would constitute a clearly unwarranted invasion of personal privacy."¹³ In *American Farm Bureau v. EPA*, the U.S. Court of Appeals for the 8th

¹⁰ Statement made by Dr. Rick Stowell in an email to Scott Yager, Chief Environmental Counsel for the National Cattlemen's Beef Association (Communication on November 7, 2017).

¹¹ "Farms should include all releases from the facility, including releases from animal waste due to animals that reside primarily outside of an enclosed structure." <https://www.epa.gov/epcra/cercla-and-epcra-reporting-requirements-air-releases-hazardous-substances-animal-waste-farms#Questions>.

¹² 5 U.S.C. § 552(b)(6).

¹³ *Id.*

Circuit reversed the lower court opinion and concluded that the EPA abused its discretion in deciding that the information at issue was not exempt from mandatory disclosure under FOIA Exemption 6.¹⁴ In that case, farm groups sought to restrain the EPA from releasing certain farm information to environmental advocacy groups pursuant to FOIA requests. That information included farm locations that were also residential addresses, personal phone numbers, and other information. Disclosure of private farm information in no way provides knowledge of federal agency activities and therefore should not be disclosed to the public. Many American agricultural operations are carried out on the same property as a private residence. Not only do the residence and operation share real property, but also physical and mailing addresses.

To prevent the release of residential addresses in violation of the Privacy Act of 1974 and FOIA Exemption 6, NCBA recommends the following alternatives:

1. Limit required location information to county and state, rather than requiring regulated entities to list their operation address.
2. Include a directive on all reporting forms that directs federal agency employees to redact private farm information before distributing documents to the public.
3. Include an option on the form for farmers to indicate if their farm is co-located with their private residence.

We appreciate the opportunity to comment on this important issue and we look forward to further engagement.

Sincerely,

A handwritten signature in black ink, appearing to read "Scott Yager", with a stylized, cursive script.

Scott Yager
Chief Environmental Counsel

¹⁴ *American Farm Bureau v. EPA*, No. 15-1234 (8th Cir. 2016).



March 27, 2008

The Honorable Stephen Johnson
Administrator
U.S. Environmental Protection Agency
1200 Pennsylvania Avenue, NW
Washington, DC 20460

**Re: CERCLA/EPCRA Administrative Reporting Exemption for Air
Releases of Hazardous Substances from Animal Waste
Docket ID No. EPA-HQ-SFUND-2007-0469**

Dear Administrator Johnson:

The National Cattlemen's Beef Association ("NCBA") is the national trade association representing U.S. cattle producers with nearly 29,000 individual members and sixty-four state affiliate, breed and industry organization members. Together NCBA represents more than 230,000 cattle breeders, producers and feeders, and is the marketing organization for the largest segment of the nation's food and fiber industry.

NCBA members are responsible environmental stewards who love and respect the land, air and water that are fundamental to sustaining our way of life. We recognize an environmental stewardship code and have adopted policy that states that the Association "shall not be compelled to defend anyone in the beef cattle industry who has clearly acted to abuse grazing, water, or air resources." 2005 Policy, National Cattlemen's Beef Association, Property Rights and Environmental Management Policy 1.1. Cattle producers will continue to work every day to protect and improve the environment so that they and future generations will be able to continue to live off the land.

On December 28, 2007, the EPA issued proposed regulations to establish an administrative reporting exemption from the notification requirements of the Comprehensive Environmental Response, Compensation, and Liability Act ("CERCLA") and the Emergency Planning and Community Right-to-Know Act ("EPCRA") for releases of hazardous substances, such as ammonia and hydrogen sulfide, to the air where the source of the release is animal waste at farms. While NCBA strongly supports the proposed exemption, we believe there are strong legal arguments that open air Cattle Operations are not regulated under these laws in the first place. This finding was the result of an extensive legal analysis conducted by the law firm of Holland & Hart (and largely included in our comments below) at NCBA's request and included in a White Paper on the subject matter NCBA submitted to the EPA in December 2003, a copy of which is attached to these comments. The analysis provides an additional and

important legal foundation to EPA's common sense approach to issues contained in the proposed rule. NCBA strongly supports the proposed administrative exemption and urges the EPA to adopt it in a final rule.

I. Cattle Operations

Members of NCBA raise and feed cattle. "Cattle Operations" include operations that raise and feed cattle in open pastures and in open-air cattle feed lots. Grazing of cattle in open pastures is usually in fenced areas, and most feeding operations take place in fenced pens. The naturally occurring and biologically produced air pollutants resulting from cattle operations are described below.

Precipitation runoff from cattle feedlot surfaces is usually contained in runoff retention ponds. The natural surface runoff during precipitation events from the feeding pens into the retention ponds results in those retention ponds containing water for various periods of time, with some being dry for most of the year. The precipitation runoff retention ponds that are part of Cattle Operations may, as described below, contain minor amounts of manure and urea from runoff, and as a result may produce some ammonia and hydrogen sulfide. These ponds are not waste lagoons, nor are they waste treatment facilities. Nutrients that may accumulate in them are periodically removed and recycled as fertilizer to croplands or composted for fertilizer.

"Cattle Operations" generally do not include operations where cattle are raised and fed in barns, nor those where cattle wastes, including manure and urea, are collected or slurried into wastewater lagoons.

A. Hazardous Air Substance "Releases"

Cattle Operations release into the air two "hazardous substances" under CERCLA and EPCRA: ammonia and hydrogen sulfide.

1. Ammonia. The natural breakdown of nitrogen in grass and other feeds (primarily corn, but also including wheat, sorghum, and other grains and foods) during digestion by cattle results in some ammonia in flatulence, belching and exhalation. In addition, the bacterial decomposition of manure and urea excreted by cattle in pastures and feed pens produces ammonia over the weeks and months after it is excreted.

Undisturbed soils also produce ammonia. As noted below, ammonia is ubiquitous, with perhaps half of the global inventory generated by undisturbed soils and biomass burning. The "reportable quantity" ("RQ") for ammonia under CERCLA and EPCRA is 100 pounds per 24-hour period, an amount that was derived from the Clean Water Act, but is applied by EPA to air and land as well as water. Ammonia is not classified as "hazardous air pollutant" under Title III of the Clean Air Act. 42 U.S.C. § 7412 (1995).

Congress has, however, dealt with the potential adverse effects of ammonia under the Clean Air Act. Subsequent to the disaster at Bhopal, India, Congress in 1990 passed amendments to the Clean Air Act dealing with accidental release prevention. 42 U.S.C.A. § 7412(r)(1995). The Senate Committee dealt specifically with ammonia, stating that:

“ . . . the principle health concern with ammonia is strictly its sudden and accidental release into the atmosphere . . . Ammonia is not carcinogenic, mutagenic, teratogenic or neurotoxic, in either low or high volumes of exposure, nor does it present any significant public health hazard or environmental hazard through chronic exposure to routine emissions.” . . . If air emissions of ammonia are hazardous at all, it is only in the case of substantial, sudden, and accidental release. . . .”

1990 Clean Air Act Legislative History at 8338, 8817 (compiled 1993) Congress. Research Service, 103rd Cong., Senate Comm. on Environment and Public Works.

The EPA's implementing regulations for this program under section 112(r) of the Clean Air Act, 42 U.S.C.A. § 7412(r) (1995), establishes threshold quantities for hydrogen sulfide of 10,000 pounds, for anhydrous ammonia, and for ammonia in concentrations of 20% or greater of 20,000 pounds in the process. Under this program, ammonia “used as an agricultural nutrient, when held by farmers, is exempt from all provisions of this part.” 40 C.F.R. §68.125.

2. Hydrogen Sulfide. As noted above, the precipitation runoff retention ponds at Cattle Operations may contain small amounts of sulfur from the trace amounts of urea and manure reaching them as a result of precipitation runoff from pens. This sulfur originates in the soils and plants, grains and other feedstuffs, and in some cases, supplements, on which the cattle are fed. The sulfur in the ponds may produce some amounts of hydrogen sulfide by virtue of anaerobic decomposition. However, precipitation runoff retention ponds at Cattle Operations are designed to be aerobic, not anaerobic. Thus little, if any, hydrogen sulfide is expected to be generated from these ponds.

Many Cattle Operations catch precipitation runoff in small settling areas or channels that precede the retention ponds. Most of the manure waste in the runoff precipitates in these settling basins. This organic material is periodically removed from the settling ponds and used as fertilizer. Retention pond liquids, which also contain some of these nutrients, are also applied to croplands periodically. Most sizeable cattle feed lots in this country are located in net evaporation areas with low rainfall.

II. ABILITY TO DETERMINE REPORTABLE QUANTITIES

The requirement of CERCLA and EPCRA to report releases of ammonia and hydrogen sulfide into the air is subject to the determination that a “reportable quantity” is emitted. For both CERCLA and EPCRA, the reportable quantities (“RQ”) of ammonia and hydrogen sulfide are 100 pounds per 24-hour period. 40 C.F.R. §302.4, Table 302.4 & 40 C.F.R. part 355, App. A. Although the ammonia 100 pound RQ was originally derived from the Clean Water Act, EPA stated in its 1985 Final Rule clarifying RQs under CERCLA that the RQ of 100 pounds applies to emissions into the air or water. See 50 Fed Reg. 13456 (Apr. 4, 1985).

EPA has a standard emissions factor document for use in estimating emissions from a wide variety of operations. The document, “Compilation of Air Pollutant Emission Factors” is generally known as “AP-42”. Its estimates generally reflect testing and sampling of several representative sources, giving an average that may be used for broad estimation purposes, but is not expected to be accurate for any particular operation. EPA posts current information and updates on AP-42 on its web site. AP-42 covers the “Food and Agriculture Industries” in Chapter 9. Section 9.4 of Chapter 9 covers “Livestock & Poultry Feed Operations.” Currently, section 9.4 states that “[a]t this time, there is no “AP-42 factor” or estimation method for this category.” (July 14, 1999 update). The document does reference “National Emission Inventory – Ammonia Emissions from Animal Husbandry Operations, Draft Report” (EPA 2004) which does make emission estimates for ammonia from livestock operations, but has not been made final for regulatory use. Chapter 9 references the final report of the National Academy of Sciences (“NAS”) Committee on Air Emissions from Animal Feeding Operations. The purpose of the report is to assess the scientific issues involved in estimating air emissions from animal feeding operations. The report concludes that there is insufficient information for adequate estimation of those emissions at the current time. “Air Emissions from Animal Feeding Operations: Current Knowledge, Future Needs” (NAS 2002), ch. 4 at pp.74-97. In addition, there have been various studies in Iowa, Kansas, and elsewhere making crude estimates based on material balance and other techniques. None of these efforts at estimation have been judged sound enough by EPA or the scientific community to support regulatory determinations or emission estimates.

The measurement of ammonia from flatulence and decomposition of manure and urea from cattle operations in open air pastures and feed lots is problematic at best. Direct measurement is not possible or feasible. Because the pollutant is dispersed in the air before measurement (in other words, already a “cloud”), the wind speed and direction, pressure and temperature, stability and mixing characteristics of the atmosphere affect the emission, and measurement depends on capturing the whole cloud in time and space. A vertical and horizontal array of tens of instruments upwind and downwind of the source being measured covering sufficient area is necessary, as is a complete set of meteorological instrumentation and data (wind speed, direction, mixing height,

pressure, etc.). Because these arrays still only measure concentrations at a relatively few points in a cloud of indeterminate size and shape over short periods of time, they are subject to very large error. In order to estimate the quantity of emissions, the concentration data from the few points in the array must be mathematically modeled, spatially averaged, and projected to simulate the cloud's form and density. Because of the impracticality and cost of operating these large arrays, and their large margin of error, quantitative emission limits for open-air fugitive operations are not a practical air pollution control technique or enforcement tool.

The ammonia produced by cattle and the ammonia and hydrogen sulfide potentially produced by some ponds with some sulfur will vary with characteristics of the ration fed to the cattle, the age of cattle, the acidity and other conditions of the digestive tract, hydration, heat, and the characteristics of the water in the retention ponds. In other words, there are a large number of variables, each of which would have to be held constant while others are varied, in order to derive emission factors. This is impractical. Even with inanimate, inert particulate matter, like fugitive dust, the error in estimation of the amounts emitted in open-air land disturbance has proved to be often an order of magnitude or more - - hardly adequate or appropriate for regulatory determinations or the imposition and enforcement of quantitative controls.

The possible use of some of the estimated emissions quantifications to date has been of concern to representatives of agriculture. Congressman John Boehner expressed that concern to former EPA Administrator Christine Todd Whitman, who responded in a letter to Congressman Boehner dated November 9, 2001 that:

“As you note in your letter, we do not currently have sound emission estimates to support regulatory determinations for animal agriculture.”

(Emphasis added.)

Former Administrator Whitman went on to note the work of the National Academy of Sciences relating to estimation of agricultural emissions and EPA's work with the Department of Agriculture's Air Quality Task Force, stating that “[w]e will use this [NAS] study to develop scientifically valid emission estimates that can be used to inform our regulatory policy decisions.” Former Administrator Whitman also took note of the Agricultural Air Quality Task Force recommendation that EPA defer implementation of CERCLA programs, stated that she was reviewing the recommendation, and that “I agree that any actions we take need to be based on sound science.” Indeed, an EPA 1994 ammonia emission factors document referenced, R. Battye et al., *Development and Selection of Ammonia Emission Factors: Final Report* (Prepared for U.S. Environmental Protection Agency, 1994) concludes that the national inventory may have left out half of the actual ammonia emissions: “Recent research

indicates that these two categories [undisturbed soils and biomass burning, which were not estimated] may contribute significantly (up to half) to the global budget of NH₃ emissions.” (*id.* at p. x)(Emphasis added).

It is fair to conclude that there is not a valid or sound scientific basis for the estimation of fugitive ammonia or hydrogen sulfide or other emissions from Cattle Operations, nor sound emissions estimates to support regulatory determinations, based on no less authority than EPA’s past Administrator Whitman, the NAS final review, and EPA’s latest updates and assessments. Thus there is no accepted method for reasonable quantification of fugitive ammonia or hydrogen sulfide or other emissions from Cattle Operations. There is no sound or reasonable basis for making a regulatory determination whether the ammonia or hydrogen sulfide from fugitive emissions from Cattle Operations do or do not exceed the reportable quantities of those substances from Cattle Operations.

As confirmed by former EPA Administrator Whitman, there are no sound emissions estimates to support regulatory determinations, and any actions taken need to be based on sound science that currently does not exist. This view is supported by (1) the fact that there are no AP-42 emission factors for Cattle Operations (even though there are studies making estimates of ammonia emissions from such operations in the AP-42 documents), and (2) the final report of the NAS committee working on the evaluation of air emissions from such operations. Given the lack of sound and accepted methods for determining whether there are reportable quantities of ammonia or hydrogen sulfide from Cattle Operations, there appears to be no reasonable basis for enforcement of CERCLA’s or EPCRA’s release reporting requirements on Cattle Operations, nor any sound basis for reporting estimates of those hazardous substances.

III. ANALYSIS OF THE APPLICABILITY OF CERCLA AND EPCRA RELEASE REPORTING REQUIREMENTS TO CATTLE OPERATIONS.

A. Release Reporting Requirements of CERCLA and EPCRA Do Not Apply to Ammonia and Hydrogen Sulfide From Cattle Operations.

While NCBA strongly supports and appreciates EPA’s proposal to exempt animal agriculture from the release reporting provisions of CERCLA and EPCRA, NCBA does not believe the release reporting requirements apply to ammonia and hydrogen sulfide emissions from Cattle Operations in the first place.

B. The Coverage and Purpose of CERCLA and EPCRA Release Reporting Requirements.

NCBA’s exhaustive review of the statutes themselves, their legislative history, and their interpretation by EPA and the courts over the course of more than 20 years, discovered no mention or indication that air emissions resulting

from flatulence, belching, exhalation, or excretion of urine or manure or their bacterial decomposition, or substances in the air resulting from runoff that encounters and carries relatively small amounts of manure or urea into precipitation runoff retention ponds are covered by the release reporting requirements of CERCLA or EPCRA. The terms of the statutes themselves, which cover “facilities” that “release” “hazardous substances” into the environment (discussed below) do not clearly or comfortably cover the biological and natural processes that result in ammonia and hydrogen sulfide at Cattle Operations. It is not a matter of broad or narrow reading of the terms of the statute, but whether those terms cover the biological and natural processes responsible for generation of ammonia and hydrogen sulfide at Cattle Operations at all. Such coverage is, NCBA believes, ambiguous at best, while the exception for “naturally occurring substances,” 42 U.S.C.A. § 9604(a) (3) (A) (discussed below) does seem to cover those processes.

The most fundamental guide to the meaning of any statute is an understanding of its purpose. As Judge Learned Hand stated in discarding the literal or “plain” meaning of a statute that was inconsistent with its purpose, “. . . statutes always have some purpose or object to accomplish, whose sympathetic and imaginative discovery is the surest guide to their meaning.” *Cabell v. Markham*, 148 F.2d 737 (2d Cir. 1945), *aff’d* 326 U.S. 404 (1945); *see also* *Billik v. Berkshire*, 154 F.2d 493, 494 (2d Cir. 1946): “Attention must always be given to what Congress sought to accomplish by the statute . . . ‘There is no surer guide in the interpretation of a statute than its purpose when that is sufficiently disclosed; nor any surer mark of oversolicitude for the letter than to wince at carrying out that purpose because the words used do not formally quite match with it’” (quoting *Federal Deposit Ins. Corp. V. Tremaine*, 133 F.2d 827, 830 (2d. Cir. 1943). The Supreme Court has cautioned against reading the “plain” language of a statute to avoid frustrating the purpose of Congress and arriving at an absurd result, stating that: “The decisions of this Court have repeatedly warned against the dangers of an approach to statutory construction which confines itself to the bare words of a statute.” *Lynch v. Overholser*, 369 U.S. 705, 711 (1962).

NCBA first looked broadly at what Congress did intend to cover in CERCLA and EPCRA, and then more specifically at what purpose Congress had in requiring release reporting.

C. Activities and Substances Congress Intended to Cover.

CERCLA was passed in the wake of Love Canal for the purpose of dealing with the “legacy of hazardous substances and wastes which pose a serious threat to human health and the environment.” S. Rep. No. 99-73, at 12 (1985), and “to clean the worst abandoned hazardous waster [sic] sites in the country . . .” H.R.Rep. No. 99-253, Part 5, at 2 (1985). The legislative history contains a litany of references to “synthetic,” “man-made” chemicals, “chemical contamination,” and the results of “modern chemical technology” as the

problems CERCLA intended to address. S. Rep. No. 96-848 at 2-6, 12 (1980); S.Rep. No. 99-11 at 1-2 (1985); S. Rep. No. 99-73, at 12 (1985); H.R. Rep. No. 99-253, part 5, at 2 (1985). It contains no reference to an intention to clean up manure or urea, or their byproducts, from cattle or any other agricultural operations.

In addition to clean up of hazardous waste sites such as Love Canal, the Senate committee stated that the legislation was intended to cover “spills and other releases of dangerous chemicals which can have an equally devastating effect on the environment and human health.” S. Rep. No. 96-848, at 5 (1980) and commented that such releases have resulted in the “loss of livestock and food products to contaminated drinking water and feed . . .” *Id.* It also noted that Superfund “may be used to compensate an agricultural producer . . . for loss” resulting from such releases of hazardous substances” *id.* at 78, and that such losses included injury to “livestock” *id.* at 79.

Congress also indicated the scope of the activities it intended to cover in the provisions it made for funding the “Superfund” to pay for cleanup. The tax it imposed focused on “the type of industries and practices that have caused the problems that are addressed by Superfund;” Congress chose to impose the tax “on the relatively few basic building blocks used to make all hazardous products and wastes.”¹ H.R. Rep. No. 99-253, Part 1, at 141 (1985); S. Rep. No. 96-848, at 19 (1980). These building blocks, or chemical “feedstocks,” are comprised of petrochemicals, inorganic raw materials, and petroleum oil because “virtually all hazardous wastes and substances are generated from these [substances].” *See id.* at 20; *see also* S. Rep. No. 99-73, at 3 (1985) (“The taxable chemical feedstocks generally are intrinsically hazardous or create hazardous products or wastes when used.”); H.R. Rep. No. 99-253, Part 1, at 141 (1985). (“[T]he problems addressed by CERCLA are byproducts of productions processes that use these raw materials.”). Manure, urea, and their byproducts, are clearly not among these materials.

The fee is levied on feedstock chemicals manufactured or imported into the United States when they are sold or used “by the manufacturer, producer, or importer thereof.” *Id.* at 7 (emphasis added). By definition, this scheme does not include taxation of ammonia or hydrogen sulfide from livestock, or their wastes. Although not determinative, the taxation provision’s focus on chemical feedstocks supports the reasoning that Congress intended to regulate the sale or

¹ The Internal Revenue Code lists the taxable chemicals and the amount imposed for each. *See* 26 U.S.C. § 4661(b). Relevant to this memorandum, ammonia is listed as a taxable inorganic raw material, with a tax of \$2.64 per ton. Hydrogen sulfide is not a listed taxable chemical. A tax is also imposed on crude oil and petroleum products “entered into the United States for consumption, use, or warehousing.” 26 U.S.C. § 4611-12.

use of synthetic, man-made chemicals with CERCLA, not the generation of ammonia and hydrogen sulfide from Cattle Operations.

The taxation provisions of CERCLA also indicate that substances like ammonia, when used for agricultural purposes, are not covered within the scope of CERCLA. Specifically, “nitric acid, sulfuric acid, ammonia, and methane used to produce ammonia, when used to produce or manufacture fertilizer, ... [or] when used as a nutrient in animal feed,” are exempted from taxation. S. Rep. No. 99-11, at 69 (1985); *see also* S. Rep. No. 99-73, at 9 (1985). The exemption is based largely on the premise that “taxation of these compounds when used to supplement animal feed constitutes a burden on both the animal feed industry and the American agricultural sector which appears to be unnecessary.” *Id.* Like taxation, regulation of the agricultural sector in the form of reporting requirements for the release of ammonia or hydrogen sulfide from livestock manure and urea would arguably constitute an “unnecessary burden” on Cattle Operations.

Based on Congress’ repeated use of language evidencing its intent to provide a notification scheme for the release of hazardous substances produced as a byproduct of “modern chemical technology,” the absence of a CERCLA taxation provision applicable to Cattle Operations, and the exclusion of day-to-day fertilizer and pesticide application by the agricultural community (see below) from reporting requirements, a reasonable interpretation of CERCLA’s legislative history leads to the conclusion that Congress did not intend to include the routine fugitive emission of ammonia and hydrogen sulfide from Cattle Operations in CERCLA’s and EPCRA’s release reporting requirements. Moreover, to include ammonia and hydrogen sulfide emissions from flatulence and decomposition of urea or manure, while excluding similar day-to-day agricultural operations involving the spreading or distribution of man-made chemical fertilizers and pesticides would result in a burdensome, incongruous, and perhaps even absurd, outcome.

D. The Purpose of Release Reporting: A Trigger for Response Action.

The purpose of the release reporting provisions of CERCLA and EPCRA is to target releases of hazardous substances that present substantial threats to public health and the environment and that require immediate response by the proper officials in order to prevent or minimize their adverse impacts. The report is required to be filed “immediately,” a term that has been very strictly construed. A delay of 1 hour and 22 minutes has been held by EPA to be a violation of the CERCLA and EPCRA requirements. *See In Re: Royster-Clark, Inc.* 2001 WL 1848806. As the Senate Committee report noted in explaining the extension of CERCLA’s release reporting requirements to include notification to state and local officials under EPCRA, EPCRA’s release reporting requirements were intended to provide “immediate direct notification of State and local emergency response officials for releases of highly toxic substances, and

particularly those determined by regulation potentially to require response on an emergency basis.” S. Rep. No. 99-11, at p. 8. In other words, the clear purpose of immediate release reporting is to provide authorities with the information needed for immediate response, if necessary.

In the case of ammonia from bacterial decomposition of manure, this requirement would call for immediate notification by hundreds if not thousands of operations. The National Response Center would be inundated with notice from cattle pasturing and feeding operations and numerous other animal agriculture operations. It seems extremely unlikely that those notifications would ever lead to any response action, since there is no evidence of the need to do so. The “releases” are low level; they pose no threat to public health or the environment, and it would be an utter waste of public resources for authorities to investigate and to consider remedial action when it would never lead to any such action.

Some have suggested that these releases could be dealt with by the annual “continuous release” exemption filing. It is not at all clear that that “exemption” would apply. Even if applicable, it is onerous indeed, requiring annual reassessment and characterization of the release. In the case of the fugitive emissions of ammonia from manure in open pastures and feedlots, such studies would be very costly, and the results highly uncertain and unreliable. The following are the requirements for continuous release reporting eligibility and compliance:

A continuous release is “a release that occurs without interruption or abatement or that is routine, anticipated, and intermittent and incidental to normal operations or treatment processes.” 40 C.F.R. § 302.8(b). The release must also be “stable in quantity and rate,” which means that it is “predictable and regular in the amount and rate of emission.” *Id.* A facility, including adjacent or contiguous facilities that are aggregated for the purpose of release reporting, will be deemed to have one continuous release, even if that release is made up of a number of different hazardous substances from a number of sources. *See* U.S. Environmental Protection Agency, *Reporting Requirements for Continuous Releases of Hazardous Substances, A Guide for Facilities on Compliance* 7 (1997), at <http://www.epa.gov/superfund/resources/release/part1-fa.pdf>. “A continuous release may be a release that occurs 24 hours a day (e.g., a radon release from a stockpile) or a release that occurs during a certain process (e.g., benzene released during the production of polymers) or a release that occurs intermittently (e.g., the release of a hazardous substance from a tank vent each time the tank is filled).” *Id.* at 3. If a release qualifies as continuous, the facility can choose to report under the reduced continuous reporting requirements under both CERCLA and EPCRA. *See* 40 C.F.R. §§ 302.8, 355.40(a)(2)(iii).

Individual facilities have discretion in determining whether their releases qualify as continuous. The person in charge of a facility can rely on “release data, engineering estimates, knowledge of operating procedures, or best

professional judgment to establish the continuity and stability of the release.” 40 C.F.R. § 302.8(d)(1)-(2). Historical reporting of releases to the NRC can also be used to establish continuity. *See id.* **“Monitoring data are not required.** Regardless of which method is used, however, **all estimates reported for a particular release must have a sound technical basis.”** U.S. Environmental Protection Agency, *Reporting Requirements for Continuous Releases of Hazardous Substances, A Guide for Facilities on Compliance* 5 (1997), at <http://www.epa.gov/superfund/resources/release/part1-fa.pdf>. (Emphasis added.) Further, the EPA may question the basis for the determination, and it is important for a facility to fully document its determination that a release is continuous. *See* U.S. Environmental Protection Agency, *Reporting Requirements for Continuous Releases of Hazardous Substances, A Guide for Facilities on Compliance* 10 (1997), at <http://www.epa.gov/superfund/resources/release/part1-fa.pdf>.

Once the person in charge of a facility determines that the release from the facility would qualify as “continuous,” a three-step reporting procedure is triggered. First, the person in charge must notify the NRC, SERC, and LEPC by telephone to alert these authorities of the facility’s intent to report the release as continuous. *See* 40 C.F.R. § 302.8(d)(3); U.S. Environmental Protection Agency, *Superfund Continuous Release Reporting Process*, <http://www.epa.gov/oerrpage/superfund/programs/er/triggers/haztrigs/crelproc.htm>.

Then, within 30 days of the initial telephone notification, the person in charge must submit written notification of the continuous release to the NRC, SERC, and LEPC. *See* 40 C.F.R. § 302.8(e)(i); U.S. Environmental Protection Agency, *Superfund Continuous Release Reporting Process*, <http://www.epa.gov/oerrpage/superfund/programs/er/triggers/haztrigs/crelproc.htm>. The written report must contain a detailed description of the facility, surrounding area, and each hazardous substance to be released, including the source of the release, past release information, and the frequency of the release. *See* 40 C.F.R. § 302.8(e)(1). The written report must also include a “brief statement describing the basis for stating that the release is continuous and stable in quantity and rate.” *Id.* § 302.8(e)(1)(iv)(E). All reported information must be “accurate and current to the best knowledge of the person in charge.” *Id.* § 302.8(e)(1)(iv)(H). The purpose of the written report is to confirm the facility’s intent to report the release as continuous and give the EPA sufficient information about the release to enable it to determine if the release qualifies as a continuous release. *See* U.S. Environmental Protection Agency, *Reporting Requirements for Continuous Releases of Hazardous Substances, A Guide for Facilities on Compliance* 7 (1997), at <http://www.epa.gov/superfund/resources/release/part1-fa.pdf>.

Finally, “within 30 days of the first anniversary of the initial written notification, the person in charge of the facility or vessel shall evaluate each hazardous substance release reported to verify and update the information

submitted in the initial written notification.” *Id.* § 302.8(f). This written report must contain substantially the same information as the initial report, “but should be based on release data and information gathered over the previous year since the submission of the initial written report. The continuous release must be reassessed annually to determine whether information previously submitted has changed.” U.S. Environmental Protection Agency, *Superfund Continuous Release Reporting Process*, <http://www.epa.gov/oerrpage/superfund/programs/er/triggers/haztrigs/crelproc.htm>. After submittal of the one-year anniversary report, the EPA requires the facility to perform an annual internal reassessment of its release, but the facility need not submit a written report “unless there is a change in the information previously submitted to EPA.” U.S. Environmental Protection Agency, *Reporting Requirements for Continuous Releases of Hazardous Substances, A Guide for Facilities on Compliance* 8 (1997), at <http://www.epa.gov/superfund/resources/release/part1-fa.pdf>.

The occurrence of two additional circumstances will also trigger further reporting requirements: 1) a statistically significant increase in the release; or 2) a change in previously submitted release information. A statistically significant increase is “an increase in the quantity of the hazardous substance released above the upper bound of the reported normal range of the release.” 40 C.F.R. § 302.8(b). The normal range, in turn, is “all releases. . . of a hazardous substance reported or occurring over any 24-hour period under normal operating conditions during the preceding year. Only releases that are both continuous and stable in quantity and rate by may be included in the normal range.” *Id.* Thus, if a release exceeds the normal range within any 24-hour period, the person in charge must notify the NRC, SERC, and LEPC. If the exceeding release is a new, continuous and stable release, it may be established as a continuous release through the same procedure – telephone and written notification – as any other continuous release. *See id.* § 302.8(g)(2).

A change in previously submitted release information includes a change in the composition or source of the release, or a change in the information submitted in the initial written notification. *See id.* § 302.8(c)(4). A change in source or composition will be considered a “new” release and “must be qualified for reporting [as a continuous release] by the submission of initial telephone notification and initial written notification...as soon as there is a sufficient basis for asserting that the release is continuous and stable in quantity and rate.” *Id.* § 302.8(g)(1).

If a change in previously submitted release information includes a change in other information initially included in the written report, written notification of the change must be submitted to the EPA within 30 days of a determination that the old information is no longer valid. *See id.* § 302.8(g)(3).

Because emissions from cattle operations vary widely depending on climate, feed, weather, age of cattle, and many other variables, the potential

ability of cattle operations to submit continuous release filings is not at all clear and, as the description above details, hardly a simple process. NCBA does not believe CERCLA and EPCRA laws were intended to cover emissions from manure and that the purpose of release reporting is not fulfilled by submitting reports on emissions from it. It is extremely unlikely that such reports would lead to any response action since there is no evidence of the need to do so since the releases pose no threat to public health or the environment.

E. Relevant Exemptions from CERCLA.

In EPCRA, Congress, recognizing that “CERCLA response authorities are extremely broad . . .” excluded from the scope of the federal response authority the release or threat of release “of a naturally occurring substance in its unaltered form, or altered solely through naturally occurring processes or phenomena, from a location where it is naturally found.” 42 U.S.C. § 104(a)(3)(A); *and see also* S. Rep. No. 99-11, at 16 (1985). The Senate committee report clarified this exception from EPA’s response authority, noting that naturally occurring releases, such as “diseases or contamination resulting from animal waste (e.g. beaver excrement),” are excluded from the response program. S. Rep. No. 99-11, at 16 (1985). Thus naturally occurring animal waste, such as urine, urea and manure, in its unaltered form, or altered solely through naturally occurring process or phenomena, are excluded from EPA’s response authority.

The flatulence, urine, urea, and manure, and the releases that result from them at dry, open-air Cattle Operations fall, we believe, within the purpose and terms of this exemption from EPA’s response authority. Flatulence and the excretion of manure and urine from cattle are surely naturally occurring, and the location of that excretion is surely “where it is naturally found,” i.e. wherever the cattle happen to be, whether in a feed pen or a pasture. The manure and urine are unaltered. The precipitation and surface runoff affecting them are naturally occurring processes. The only change in the location of these animal wastes occurs when they are periodically removed from the cattle pens and recycled through composting and/or application to croplands. That movement does not, materially affect the bacterial decomposition of the manure or urea, which occurs independent of its removal, transportation, sometimes composting, and application to croplands as fertilizer. The “normal application of fertilizer” is separately excluded from the definition of CERCLA “releases” that require reporting. 42 U.S.C.A. § 101 (22).

Some might argue that livestock are not “naturally” contained within fenced pens or in the large numbers involved in modern Cattle Operations. However, this ignores that the CERCLA exemption is directed at whether the *substance* is naturally-occurring, not at the context or circumstances in which the substance might be released.

F. Effect of the Exemption of Cattle Operations from Response Authority on Interpretation of CERCLA and EPCRA Release Reporting Obligations.

Generally, a statute should be interpreted as a whole, and the individual provisions should be analyzed in accordance with the object and policy of the entire law. *See Abramson v. U.S.*, 42 Fed. Cl. 621, 629 (1998) (citing *Kelly v. Robinson*, 479 U.S. 36, 43 (1986)). “In construing a statute, courts should not attempt to interpret a provision such that it renders other provisions of the same statute inconsistent, meaningless, or superfluous.” *Id.* (citing *Boise Cascade Corp. v. U.S.*, 942 F.2d 1427, 1432 (9th Cir. 1991)). To require a facility to report a release of a naturally occurring substance would not only be inconsistent with Congress’ clear intent under § 104 to exclude such substances from the federal government’s management under CERCLA and EPCRA, but it would also lead to the incongruous result of reporting releases under § 103 that would never be responded to under § 104.

Because the purpose of reporting a release under § 103 is to alert the proper authorities of the release so that they can best determine how to respond to the release, it would be superfluous to require reporting for a release that is statutorily excluded from the federal government’s response authority. While the legislative history indicates that Congress only intended to cover modern chemical technology, synthetic chemicals and man-made processes and substances, even if CERCLA and EPCRA were interpreted to cover flatulence, manure, urine and their decomposition, the resulting ammonia and hydrogen sulfide from them falls fairly within the statutory exclusion of “naturally occurring substances” from response action.

If response action for those releases is prohibited, it then makes sense to interpret CERCLA § 103 reporting requirements not to include those substances and activities, because to do so would render the release reporting requirement of section 103 superfluous. EPA has so interpreted the “naturally occurring substance exemption” in the case of radionuclides from undisturbed lands. 63 Fed. Reg. 13460, 13462, col.2 (March 19, 1998), declaring that: “[r]eporting of naturally occurring radionuclide releases from undisturbed land holdings is unnecessary because CERCLA section 104(a)(3) generally precludes removal or remedial actions in response to a release “of a naturally occurring substances in its unaltered form or altered solely through naturally occurring process or phenomena, from a location where it is naturally found.”

EPA has stated the purpose for release reporting notification under CERCLA, and its interpretation of authority for granting exemptions, in cases where the release does not already fall clearly within a statutory exemption, as follows:

“This purpose, as the Agency has previously stated on numerous occasions, is to require ‘notification of releases so that the

appropriate federal personnel can evaluate the need for a federal response action and undertake any necessary response (removal or remedial action) in a timely fashion.’ [citation omitted] . . . Thus if the Agency determines that the federal government would never, or would only rarely, take a response action as a consequence of the harm posed by the release or because of the infeasibility of a federal response, a basis for an exemption from the section 103 reporting requirements may exist.”

54 Fed. Reg. 22524, 22528.

Based on this interpretation, EPA exempted release of naturally occurring radionuclides from large, generally undisturbed land holdings, such as golf courses and parks, along with those activities that involve the disturbance of large areas of land, such as farming or building construction.” *Id.*

With respect to disturbance of large areas of land, such as farming that caused releases of “reportable quantities” of radionuclides, EPA concluded that those “activities rarely would pose a hazard to the public health or welfare or the environment because releases would be dispersed widely in the environment at levels not much (if at all) above natural background. *Id.*

In the same rulemaking EPA exempted “the dumping of coal and coal ash, as well as radionuclide releases to all media from coal and coal ash piles, at utility and industrial facilities with coal-fired boilers.” *Id.* EPA explained that it did so because “the Agency believes that the submission of individual reports from each industrial and utility facility with coal and coal ash piles may not be consistent with the purposes of the section 103 reporting requirement.” *Id.* at 22529. (Emphasis added). It found that the concentration levels emitted from these piles

“will always be emitted continuously at low levels spread over large areas” [and] “never will be emitted at a high rate or in an unusually large amount as the result of a sudden episodic release . . . Perhaps more importantly, however, a response action (i.e., removal or remedial action) under CERCLA does not appear to be the most appropriate federal regulatory response to radiation releases that are (1) similar in amount and concentration across an entire sector of industry; (2) pose acceptable exposure risks; and (3) disperse quickly in the environment such that a response is not necessary to cleanup the accumulation of what has already been released.”

Id.

On March 19, 1998, EPA broadened these exemptions from release reporting requirements for radionuclides for land disturbance “to include land

disturbance incidental to extraction activities at all mines except limited categories with elevated radionuclide concentrations. 63 Fed. Reg. 13460, 13462, col. 2. It stated its authority to do so as follows:

CERCLA sections 102(a), 103, and 115 together provide EPA with authority to grant administrative reporting exemptions. Such exemptions may be granted for releases of hazardous substances that pose little or no risk or to which a Federal response is infeasible or inappropriate. Requiring reports of such releases would serve little or no useful purpose and could, instead, impose a significant burden on the Federal response system and on the persons responsible for notifying the Federal government of the release. Through such reporting exemptions, therefore, the Federal response system is able to more efficiently implement CERCLA and EPCRA and more effectively focus on reports of releases that are more likely to pose a significant hazard to human health and the environment.

63 Fed. Reg. 13460 (Mar. 19, 1998).

EPA's interpretation of the scope of the naturally occurring substance exemption, and its authority to broaden it to cover other activities where response action is inappropriate, infeasible and unnecessary, have evident application and relevance to Cattle Operations. EPA's determination that activities that fall within section 104(a)(3)'s exemption from response action need not report under section 103 means that if Cattle Operations fall within section 104(a)(3)(A)'s exemption of naturally occurring substances, there is no need to report such releases under section 103 of CERCLA.

Second, NCBA believes that manure falls within the criteria under which EPA has exercised its authority to exempt activities that result in low exposure and slow release over large areas to releases that pose little risk and disperse quickly, making response infeasible and inappropriate.

G. The Release Reporting Requirements of CERCLA and EPCRA, Read Fairly and In Accordance with their Purpose, Do Not Cover Cattle Operations.

The CERCLA and EPCRA definitions and reporting requirements are largely the same and have been described as "inextricably intertwined." *In re: Thoro Products Co.* 1992 WL 143993 *10 (E.P.A.). In fact, for hazardous substances such as ammonia and hydrogen sulfide listed under both CERCLA and EPCRA, the reporting requirements of CERCLA are the trigger for reporting under EPCRA 42 U.S.C. §11004(a); if the release of a hazardous substance is exempt from CERCLA reporting requirements, it will be exempt from EPCRA requirements as well. *Id.* CERCLA section 103(a) requires release reporting from "facilities" that release "hazardous substances" into the "environment."

“Facilities” cover a broad range of buildings, installations, impoundments, and areas, all of which are subject to the condition that they are “where a hazardous substance has been deposited, stored, disposed of, or placed or otherwise come to be located . . .” 42 U.S.C. 9601(9). None of these terms would seem to apply to the generation of ammonia or hydrogen sulfide from flatulence or the excretion by cattle of urine or manure, nor to their bacterial decomposition. In other words, those biological processes do not fall within the normal meanings and uses of “deposit, storage, disposal or location” of ammonia or hydrogen sulfide. Those statutory terms all seem to connote the activity and involvement of humankind, not a naturally occurring biological process such as excretion by cattle of manure and urine and its biological decomposition into ammonia, or anaerobic decomposition into hydrogen sulfide.

The term “release” includes “any spilling, leaking, pumping, emitting, emptying, discharging, injecting, escaping, leaching, dumping, or disposing into the environment (including the abandonment or discharging of barrels, containers, and other closed receptacles containing any hazardous substance or pollutant or contaminant) . . .” 42 U.S.C. 9601(22). Again, none of these terms would normally be used to describe the excretion of urine or manure from cattle on feed pen surfaces or the ground; each of these terms connotes anthropomorphic causation, not biological excretion and bacterial decomposition.

The “environment” 42 U.S.C. § 9601(8), however, clearly includes the ambient air to which the general public has access, as well as outdoor areas. We assume that any amounts of ammonia or hydrogen sulfide that may be generated at Cattle Operations could be transported off the property.

EPCRA’s definition of “facility” includes:

all buildings, equipment, structures, and other stationary items which are located on a single site or on contiguous or adjacent sites and which are owned or operated by the same person (or by any person which controls, is controlled by, or under common control with, such person).

42 U.S.C. 329(4).

EPCRA notification is only required for release from facilities where a hazardous substance is produced, used or stored. Again, the terms “buildings, equipment, structures and other stationary items” do not comfortably or clearly include cattle feeding, roaming, and cavorting in feed pens or pastures, and the “extremely hazardous substance” resulting from their excretion of urine and manure and its bacterial or anaerobic decomposition do not comport with ordinary notions of the “production, storage, or use” of a “hazardous chemical” intended to be covered by EPCRA. Indeed, the definition of “hazardous chemical” excludes “any substance to the extent it is used in routine agricultural

operations.” In our view, neither hydrogen sulfide nor ammonia that disperses as a gas from flatulence, urination, defecation, or bacterial or anaerobic decomposition, is “applied, administered, or used” in routine agricultural activities. However, if EPA were to view those gases as produced, stored or used within EPCRA’s meaning, they would surely also be viewed as routine agricultural activities. There is nothing much more routine for cattle than urinating and defecating.

At the very least, there is a lack of plain and clear meaning and coverage of Cattle Operations by the bare words of these statutes. When that is the case, it is necessary to turn to the purpose of the statute as the touchstone of its meaning and to the legislative history to determine if there was an intent to cover Cattle Operations. As described above in seeking to discover the purpose of CERCLA and EPCRA, their coverage, and particularly the purpose of their release reporting requirements, those statutes repeatedly refer to modern chemical technology, synthetic chemicals, and hazardous substances and wastes resulting from human activity.

The references to agriculture in the legislative history refer to Cattle Operations as a resource to be protected and compensated for loss rather than as operations which are a source of hazardous wastes to be regulated. To the extent there is mention or explicit treatment of agricultural activities or livestock, it is to exempt such activities as the “normal application of fertilizer.” 42 U.S.C. 9601(22)(D). The legislative history of that provision reflects Congressional awareness that chemical fertilizers did contain hazardous substances, but exempted them in normal use in agriculture. The removal, transportation, composting, and application to croplands of (1) manure and (2) sedimentation and retention pond liquids and soils as fertilizer, may well be covered by this exemption from the definition of “release” even if they are thought to be covered by the term “facilities.” As noted above, it would be incongruous, if not patently absurd, to construe the coverage of CERCLA and EPCRA release reporting to exempt the application of pesticides and chemical fertilizers, and routine agricultural operations, but to treat flatulence, urination and defecation as “releases” of “hazardous substances” from “facilities.”

IV. PROPOSED DEFINITIONS

EPA asked for comments on its proposed definitions for “animal waste” and “farm.” NCBA supports the proposed definition for animal waste:

means manure (feces, urine, other excrement, and bedding produced by livestock that has not been composted), digestive emissions, and urea. The definition includes animal waste when mixed or commingled with bedding, compost, feed, soil and other materials typically found with animal waste.

NCBA also believes EPA appropriately defines “farm” by using the definition found in the National Agricultural Statistics Service (NASS) Census of Agriculture:

(a) [A]ny place whose operation is agricultural and from which \$1,000 or more of agricultural products were produced and sold, or normally would have been sold, during the census year. Operations receiving \$1000 or more in Federal government payments are counted as farms, even if they have no sales and otherwise lack the potential to have \$1,000 or more in sales; or, (b) a Federal or State poultry, swine, dairy or livestock research farm.

V. CONCLUSION ON CERCLA AND EPCRA RELEASE REPORTING APPLICABILITY.

In conclusion, NCBA believes that CERCLA and EPCRA release reporting requirements when read fairly and in accordance with their purpose, and consistent with the other provisions of the statute, do not apply to Cattle Operations as described and defined above. One winces at the strained and distorted interpretations that would reach the conclusion that they are covered. At the same time, NCBA believes that ammonia and hydrogen sulfide from Cattle Operations fall within the naturally occurring substances exemption from EPA’s response authority, and therefore do not require reporting consistent with EPA’s prior interpretations. We also believe Cattle Operations fit the criteria under which EPA has exempted other activities where response action is not appropriate or feasible, such as release of reportable quantities of radionuclides from mines, farming and land disturbance.

In light of these conclusions, NCBA believes it is entirely appropriate to treat Cattle Operations as not covered by CERCLA and EPCRA release reporting and response authorities and to exempt them from these regulations. We commend the EPA for taking the common sense approach in the proposed rule and urge the adoption of the exemption in the final rule.

Thank you for your consideration of NCBA’s comments.

Sincerely,

Terry Stokes, CEO
National Cattlemen’s Beef Association

Attachment



NATIONAL CATTLEMEN'S BEEF ASSOCIATION

1301 Pennsylvania Ave., NW, Suite #300 • Washington, DC 20004 • 202-347-0228 • Fax 202-638-0607

December 10, 2003

The Honorable Michael O. Leavitt
Administrator
U. S. Environmental Protection Agency
1200 Pennsylvania Avenue, NW
Washington, DC 20460

**Re: Application of Clean Air Act Major Source Permit Programs
and CERCLA/EPCRA Release Reporting Requirements to
Cattle Operations.**

Dear Administrator Leavitt:

In the course of the last year members of your staff, as well as representatives of the Office of General Counsel, have taken the time to meet with and to assist representatives of the National Cattlemen's Beef Association ("NCBA") tasked to address NCBA members' concerns with complying with Clean Air Act major source permitting requirements and CERCLA/EPCRA release reporting requirements for cattle operations. NCBA itself, through its air working group, has devoted extensive resources and study to the air quality concerns that have been expressed by its members and others. Our meetings with Ms. Shaver and representatives of EPA's Emissions Standards Division in October 2002, with Mr. Holmstead and Mr. Wehrum of EPA's Office of Air and Radiation, and Mr. Page of EPA's Office of Air Quality Planning and Standards in December 2002, and with Ms. Horinko and representatives of EPA's Office of Solid Waste and Emergency Response and Office of General Counsel in April 2003, reviewed and discussed in considerable depth the potential requirements of EPA's major source Clean Air Act permit programs and CERCLA's and EPCRA's release reporting requirements for cattle operations. The consultation and advice of your staffs is greatly appreciated. It has and will continue to assist NCBA members with voluntary compliance with applicable laws.

The purpose of this letter is to convey NCBA's understanding of the Clean Air Act's major source permitting and CERCLA/EPCRA's release reporting requirements to the cattle operations of our members, and to seek your concurrence either formally or informally, through ruling or policy guidance as you deem appropriate. NCBA would like to be able to confirm its understanding of the application of these laws by EPA to cattle operations, and to convey that understanding to its membership.

One of the results of NCBA's consultation with EPA and its own review has been to define and to limit carefully the activities of NCBA members on which we seek your general confirmation of NCBA's understanding and position. The "Cattle Operations" treated in the attached White Paper and Addendum of supporting authorities include only the grazing and feeding of cattle in open-air pastures and feedlots. The primary wastes from these operations, manure and urea, are beneficially recycled as fertilizer. No barns or wastewater lagoons are included in "Cattle Operations" as defined for purposes of your consideration of this issue in NCBA's White Paper. The only ponds involved are precipitation retention ponds. Similarly, Cattle Operations do not include any sources of non-fugitive emissions that exceed the thresholds for the Clean Air Act's major source permit programs, namely those of Title V, Prevention of Significant Deterioration ("PSD") and nonattainment New Source Review ("NSR"). This carefully limited definition of Cattle Operations accurately describes the open-air pasturing and feeding operations of the overwhelming majority of NCBA members.

Based on Cattle Operations as defined and limited in attached White Paper and Addendum, NCBA seeks EPA's concurrence in its understanding that:

1. The Clean Air Act's major source permit programs (Title V, PSD & NSR) do not require permits for Cattle Operations.
2. The release reporting requirements of CERCLA and EPCRA do not apply to Cattle Operations.

NCBA's basis for its understanding is spelled out in the attached White Paper and Addendum of supporting legal authorities, which was developed based upon our consultation with EPA and others.

One of NCBA's primary concerns is that Cattle Operations not be confused with other operations whose compliance EPA is also assessing. It is our belief that Cattle Operations present a clear and straightforward application of law to facts that may be readily addressed by EPA. If NCBA can be of any further assistance, or provide any further information, please contact me at 303-694-0305, or Ms. Tamara Thies at 202-347-0228. Again, we thank you for your help and consideration of NCBA's request.

Very truly yours,

A handwritten signature in black ink, appearing to read "Terry L. Stokes".

Terry Stokes, CEO
National Cattlemen's Beef Association

cc: Jeffrey R. Holmstead
Marianne L. Horinko
Bill Wehrum
Bill Harnett
Sally Shaver

Enclosures (2)
White Paper
Addendum

DECEMBER 10, 2003

**NCBA WHITE PAPER
ON APPLICABILITY OF
(1) CERCLA, /EPCRA RELEASE REPORTING
AND
(2) CLEAN AIR ACT PERMIT REQUIREMENTS.**

This NCBA White Paper addresses the concern expressed by many NCBA members with respect to compliance with Clean Air Act major source permit requirements and the application of release reporting requirements under CERCLA/EPCRA to the cattle operations of most of its members, namely open-air grazing and feeding of cattle in pastures or feedlots. Over the last year NCBA staff and its Air Working Group have devoted themselves to resolving those compliance issues for open pasture and open-air, cattle feeding operations with precipitation runoff retention and settling ponds, but no animal feeding barns or wastewater lagoons or major point sources, such as stationary diesel engines exceeding applicable permit thresholds ("Cattle Operations"). An intensive and detailed legal and technical review has led NCBA to conclude that such cattle operations (1) are not subject to Clean Air Act major source permitting requirements, and (2) were not intended to be covered, and either are already, or should be, exempted from CERCLA/EPCRA release reporting requirements. This White Paper summarizes NCBA's position and basis for these conclusions. The attached Addendum on legal authorities provides more detail on the legal and factual basis for NCBA's position.

CLEAN AIR ACT PERMIT REQUIREMENTS

NCBA's analysis of the Clean Air Act's major source or major stationary source permit programs (namely the Title V, Prevention of Significant Deterioration ("PSD"), and non-attainment New Source Review) concludes that Cattle Operations do not require any of those permits. The reason for this is that the emissions from Cattle Operations are almost entirely fugitive emissions. The non-fugitive emissions of even the largest Cattle Operation do not approach the permit's thresholds for these permits. Fugitive emissions from Cattle Operations do not count in determining whether the permit thresholds of these permit programs apply. As a result, it will serve no useful purpose for determining permit thresholds or applicability to attempt to quantify fugitive emissions from Cattle Operations.

Cattle Operations are "minor sources" under the Clean Air Act. In addition, EPA has acknowledged that there are no scientifically sound emissions

factors or quantification or modeling techniques currently in existence that are adequate for regulatory determinations.

Finally, many if not most states with significant cattle operations already have in place conservation laws and air quality control regulations requiring best management practices and controls for cattle operations. Local nuisance and odor problems are more appropriately left to state and local authority.

CERCLA AND EPCRA RELEASE REPORTING

CERCLA and EPCRA's release reporting requirements, read fairly and in accordance with their purpose, do not apply to Cattle Operations. Those laws, adopted in response to Love Canal and Times Beach, were designed to deal with synthetic, man-made, manufactured and produced chemicals, and the hazardous wastes resulting from modern chemical technology. The legislative history contains a litany of references to Congress' purpose to cover such hazardous waste facilities. Congress treated cattle, livestock and agricultural operations as valuable resources that may be adversely affected by such chemicals and releases, and may be compensated for their losses, with explicit exemptions for the application of fertilizer to cropland or the use of pesticides.

Congress also created an exclusion from response (clean up) action for "naturally occurring substances" that we believe covers the ammonia from flatulence, urination, defecation, and the bacterial decomposition of manure and urea, as well as the formation of whatever hydrogen sulfide and ammonia may evolve from precipitation runoff that contacts the urea, manure or soils and is collected in precipitation runoff retention ponds. The legislative history of this exemption makes explicit reference to "animal wastes."

The clear purpose of release reporting under CERCLA and EPCRA is to provide immediate notice to government agencies, enabling emergency response action by them. In accordance with EPA's interpretation of this exclusion, and precedent that has excluded golf courses and farms from release reporting requirements for radionuclides, as well as established rules of statutory construction, NCBA submits that Cattle Operations are within the naturally occurring substances exclusion from EPA's response authority. CERCLA and EPCRA should not be interpreted to require release reporting that the agencies receiving it are prohibited from responding to; to do so would be wasteful, superfluous and futile.

In addition, EPA has excluded from release reporting those operations where response actions are infeasible or inappropriate, even where they are not explicitly exempted as naturally occurring substances, fertilizer or pesticides. It has done so, for instance, with radionuclides from dumping of coal and coal ash, and coal ash piles at power plants and industrial operations, as well as those from most mining operations. Cattle Operations, even if covered as "facilities" "releasing" "hazardous substances," and even if not within the naturally

occurring substance exclusion, are very clearly with EPA's established grounds for exemption from release reporting, which include (1) continuous low level emissions over large areas, (2) rapid dispersion in the environment, and (3) acceptable exposure risk, all of which make response action infeasible or inappropriate. Congress explicitly recognized the low risk of low-level, continuous ammonia releases. Ammonia and hydrogen sulfide are not listed as hazardous air pollutants under the Clean Air Act.

Based on the results of NCBA's work, NCBA is requesting that EPA provide a clear ruling, or explicit guidance, that Cattle Operations are not subject to Clean Air Act major source permitting requirements or release reporting requirements under CERCLA/EPCRA.

RTC

Addendum Attached.

3107150_1.DOC

December 10, 2003

**ADDENDUM IN SUPPORT OF
NCBA WHITE PAPER
ON APPLICABILITY OF
(1) CERCLA, /EPCRA RELEASE REPORTING
AND
(2) CLEAN AIR ACT PERMIT REQUIREMENTS.**

This Addendum to the attached National Cattleman's Beef Association ("NCBA") White Paper dated November 20, 2003, provides the legal analyses and authorities supporting NCBA's position on the applicability of (1) the release reporting requirements of the Comprehensive Environmental, Response, Compensation and Liability Act of 1980, 42 U.S.C. §§ 9601 et seq. ("CERCLA") and the Emergency Planning and Community Right-to-Know Act of 1986, 42 U.S.C. §§ 11001 et seq. ("EPCRA"), to certain hazardous air substances (specifically ammonia and hydrogen sulfide), and (2) the Clean Air Act's major stationary source permitting programs to the air pollutants that may result from "Cattle Operations" as described and defined for purposes of this White Paper (see especially sections I. & II. below).

TABLE OF CONTENTS

	<u>Page</u>
I. Cattle Operations.....	3
A. Hazardous Air Substance “Releases”	3
1. Ammonia.....	3
2. Hydrogen Sulfide.....	4
B. Particulate Matter and Other Sources of Air Pollution At Cattle Operations	5
II. Sources and Substances Not Covered	6
III. Fugitive and Non-Fugitive Emissions from Cattle Operations; “Minor Source” Status of Cattle Operations	6
IV. Ability to Determine Reportable Quantities and Permit Applicability Thresholds.....	8
V. Clean Air Act Permit Requirements Applicable to Cattle Operations.....	11
Conclusion on CAA Major Source Permit Requirements.	13
VI. Analysis of the Applicability of CERCLA and EPCRA Release Reporting Requirements to Cattle Operations.....	13
A. The Coverage And Purpose of CERCLA and EPCRA Release Reporting Requirements.	14
B. Activities and Substances Congress Intended to Cover.....	15
C. The Purpose of Release Reporting: A Trigger for Response Action.....	17
D. Relevant Exemptions from CERCLA.....	17
E. Effect of the Exemption of Cattle Operations from Response Authority on Interpretation of CERCLA and EPCRA Release Reporting Obligations.	18
VII. Conclusion on CERCLA and EPCRA Release Reporting Applicability.....	23

I. CATTLE OPERATIONS

Members of the National Cattlemen's Beef Association ("NCBA") raise and feed cattle. "Cattle Operations" include operations that raise and feed cattle in open pastures and in open-air cattle feed lots. Grazing of cattle in open pastures is usually in fenced areas, and most feeding operations take place in fenced pens. The naturally occurring and biologically produced air pollutants resulting from cattle operations, as well as related man-made sources of air pollutants, are described in this and following sections of the Addendum.

Precipitation runoff from cattle feedlot surfaces is usually contained in runoff retention ponds. The natural surface runoff during precipitation events from the feeding pens into the retention ponds results in those retention ponds containing water for various periods of time, with some being dry for most of the year. The precipitation runoff retention ponds that are part of Cattle Operations may, as described below, contain minor amounts of manure and urea from runoff, and as a result may produce some ammonia and hydrogen sulfide. These ponds are not waste lagoons, nor are they waste treatment facilities. Nutrients that may accumulate in them are periodically removed and recycled as fertilizer to croplands or composted for fertilizer.

"Cattle Operations" as defined and used in this White Paper do not include operations where cattle are raised and fed in barns, nor those where cattle wastes, including manure and urea, are collected or slurried into wastewater lagoons.

A. Hazardous Air Substance "Releases"

The "hazardous substances" in air potentially requiring release reporting under CERCLA and EPCRA are ammonia and hydrogen sulfide.

1. Ammonia. The natural breakdown of nitrogen in grass and other feeds (primarily corn, but also including wheat, sorghum, and other grains and foods) during digestion by cattle results in some ammonia in flatulence, belching and exhalation. In addition, the bacterial decomposition of manure and urea excreted by cattle in pastures and feed pens produces ammonia over the weeks and months after it is excreted.

Undisturbed soils also produce ammonia. As noted below, ammonia is ubiquitous, with perhaps half of the global inventory generated by undisturbed soils and biomass burning. The "reportable quantity" ("RQ") for ammonia under CERCLA and EPCRA is 100 pounds per 24-hour period, an amount that was derived from the Clean Water Act, but is applied by EPA to air and land as well as water. Ammonia is not classified as "hazardous air pollutant" under Title III of the Clean Air Act. 42 U.S.C. § 7412 (1995).

Congress has, however, dealt with the potential adverse effects of ammonia under the Clean Air Act. Subsequent to the disaster at Bhopal, India, Congress in 1990 passed amendments to the Clean Air Act dealing with accidental release prevention. 42 U.S.C.A. § 7412(r)(1995). The Senate Committee dealt specifically with ammonia, stating that:

“ . . . the principle health concern with ammonia is strictly its sudden and accidental release into the atmosphere . . . Ammonia is not carcinogenic, mutagenic, teratogenic or neurotoxic, in either low or high volumes of exposure, nor does it present any significant public health hazard or environmental hazard through chronic exposure to routine emissions.” . . . If air emissions of ammonia are hazardous at all, it is only in the case of substantial, sudden, and accidental release. . . .”

1990 Clean Air Act Legislative History at 8338, 8817 (compiled 1993) Congress. Research Service, 103rd Cong., Senate Comm. On Environment and Public Works.

The EPA's implementing regulations for this program under section 112(r) of the Clean Air Act, 42 U.S.C.A. § 7412(r) (1995), establishes threshold quantities for hydrogen sulfide of 10,000 pounds, for anhydrous ammonia, and for ammonia in concentrations of 20% or greater of 20,000 pounds in the process. Under this program, ammonia “used as an agricultural nutrient, when held by farmers, is exempt from all provisions of this part.” 40 C.F.R. §68.125.

2. Hydrogen Sulfide. As noted above, the precipitation runoff retention ponds at Cattle Operations may contain small amounts of sulfur from the trace amounts of urea and manure reaching them as a result of precipitation runoff from pens. This sulfur originates in the soils and plants, grains and other feedstuffs, and in some cases, supplements, on which the cattle are fed. The sulfur in the ponds may produce some amounts of hydrogen sulfide by virtue of anaerobic decomposition. However, precipitation runoff retention ponds at Cattle Operations are designed to be aerobic, not anaerobic. Thus little, if any, hydrogen sulfide is expected to be generated from these ponds.

Many Cattle Operations catch precipitation runoff in small settling areas or channels that precede the retention ponds. Most of the manure waste in the runoff precipitates in these settling basins. This organic material is periodically removed from the settling ponds and used as fertilizer. Retention pond liquids, which also contain some of these nutrients, are also applied to croplands periodically. Most sizeable cattle feed lots in this country are located in net evaporation areas with low rainfall.

B. Particulate Matter and Other Sources of Air Pollution At Cattle Operations

The action of cattle hooves on dried manure and soil also produces dust (coarse particulate matter), particularly in the arid and semi-arid areas of the United States where most Cattle Operations are conducted. In cattle feed lots, the dried manure is periodically scraped and removed from the pen surface in a process that takes a matter of hours, and generally occurs at least once a year. The manure is then applied to croplands or composted for later use as fertilizer. The dried manure in the pens is also mounded for habitat purposes, and compacted to form a nearly impermeable seal to prevent percolation of water through the pen surface to potential groundwater aquifers. As noted above, most Cattle Operations of significant size are located in arid areas, where water is a scarce, and carefully protected, resource.

Particulate matter is also produced by feed delivery trucks on the roads in the feed lot, and by open loading and unloading of silage and other feed materials into trucks and feed bunkers. Cowboys on horseback in the pens, as well as other housekeeping operations and light vehicles and trucks supplying and servicing the feed lot also produce some dust from roads as well as engine exhaust.

Other air pollution sources present at typical Cattle Operations include feed mills, which store and prepare the feed. These feed mills typically include temporary feed storage facilities, (1) to which corn and other grains are transported by train and truck, mixed with various supplements and other ingredients, and loaded by truck and front-end loaders, and (2) from which rolled and prepared grains are loaded onto trucks that convey them to feeding “bunkers” on the periphery of the feeding pens. Truck loading and unloading of feed materials, small gas-fired steam boilers for warming feed corn, and the use of scrapers and light truck and other vehicles often powered by diesel engines for transporting grains and feed, together with space and water heating for office and employee quarters, and light vehicles, round out the sources of air pollutants at typical Cattle Operations. Their fugitive and non-fugitive emissions are treated below.

The coarse PM₁₀ national ambient air quality standard (“NAAQS”) that was adopted by EPA in 1997 was vacated by the Court of Appeals for the District of Columbia in *American Trucking Assn. v. EPA*, 175 F.3d 1027, 1057 (D.C.Cir. 1997) because it was confounded by including fine and coarse PM. On remand from the Court, EPA is considering the adoption of a new coarse PM standard. NCBA submits that the consensus of sound scientific opinion remains that there are no substantial health or welfare effects from fugitive dust or particulate matter at ambient levels.

In addition the new fine PM standard (that by definition should not include fugitive dust or coarse PM) is measuring on the order of 50 percent

fugitive dust, making it also confounded in the same way that led the Court to vacate the PM₁₀ coarse standard. In the meantime, the pre-1997 PM₁₀ standards, which are as confounded by including fine and coarse PM as the coarse PM standard vacated by the Court, are being maintained in effect by EPA. NCBA strongly encourages EPA to revise its measurement and analysis methods to separate fine and coarse PM, and to perform the research necessary to determine whether coarse PM has substantial adverse effects at ambient levels.

II. SOURCES AND SUBSTANCES NOT COVERED

The Cattle Operations addressed by this White Paper do not, by definition, include any major stationary sources of non-fugitive emissions that in the aggregate would exceed any of the permit thresholds of the Title V, PSD or nonattainment New Source Review permit programs, such as diesel engines used for power generation or pumping water. Cattle Operations do not include beef slaughterhouses, tanneries, or rendering operations, nor barns in which cattle are fed and from which manure and urea are conveyed to wastewater lagoons. Nor does this White Paper treat the requirements applicable to the tailpipe emissions from mobile sources used at Cattle Operations. In other words, for purposes of this White Paper, Cattle Operations do not include “major stationary sources” under EPA’s Title V, PSD, or NSR permitting programs that may be located on, or adjacent or contiguous to, a Cattle Operation.

III. FUGITIVE AND NON-FUGITIVE EMISSIONS FROM CATTLE OPERATIONS; “MINOR SOURCE” STATUS OF CATTLE OPERATIONS

The emissions of concern at Cattle Operations are almost entirely “fugitive emissions.” Fugitive emissions are not counted in determining whether a permit is required under the Clean Air Act’s major source permitting programs, with few exceptions (so-called “listed sources” that do not include Cattle Operations). “Fugitive emissions” are “those emissions which could not reasonably pass through a stack, chimney, vent, or other functionally equivalent opening.” 40 C.F.R. §52.21(b)(20).

Because cattle grazing and feeding in fenced pens or pastures are open-air operations, and could not reasonably be enclosed and vented through a pipe, chimney, vent or other opening, emissions from them are virtually all fugitive emissions. Ammonia in flatulence, urination, defecation, and bacterial decomposition of manure and urea are fugitive emissions. So is the particulate matter that becomes airborne from pen surfaces, roads, alleys, and open areas due to wind and activities such as loading and unloading, hoof action on pen surfaces, and dust from trucks, light vehicles, cowboys, and surface disturbance. The emissions that may come from precipitation runoff retention ponds, which may include small amounts of ammonia or hydrogen sulfide, and perhaps other compounds, are also fugitive emissions.

As noted above, the activities that can result in fugitive emissions are multiple, including wind on soils and pen surfaces, hoof action on the same surfaces, feed truck and front end loaders loading feed, feed trucks unloading feed, front end loaders scraping and loading and contouring dried manure for recycling on croplands or composting, trucks being loaded and hauling dried manure and other supplies, maintaining roads and alleys, dust from traffic on them, and numerous other activities in the pens, including cowboys on horses whose hooves also produce some fugitive dust.

It is neither feasible nor reasonable to enclose and vent through a stack and control device the fugitive emissions from open-air Cattle Operations. Cattle Operations cover tens to thousands of acres. They require access by feed trucks, ingress and egress by the cattle and by horses, light vehicles, scrapers, loaders and unloaders. Even if it were feasible (and we do not believe it is) to enclose and vent such operations, it is certainly not economical, nor is there any conceivable cost-benefit analysis that would support doing so. The pollutants involved, primarily fugitive dust and ammonia, have no substantial health or welfare effects at ambient levels as long as they are reasonably controlled through the use of good management practices.

In addition, as noted above, Cattle Operations, for purposes of this White Paper and any policies, rulings, regulations or guidance that may be based on it, do not include non-fugitive emissions from Cattle Operations, such as those enumerated above (feed mills, grain storage, space and water heating et al.) that may emit, or have the potential to emit, 100 tons per year or more of any single regulated pollutant or lower thresholds in serious or severe non-attainment areas which may be applicable. Cattle Operations so defined are below the thresholds for major source permit applicability (see discussion below of Clean Air Act Permit Requirements). They are classified as “minor sources” for Clean Air Act purposes.

In addition, no reasonable or reliable quantification of the fugitive “emissions” of ammonia, methane, hydrogen sulfide, other reduced sulfur compounds, volatile organic compounds, sulfur dioxide, carbon monoxide, carbon dioxide, nitrogen oxides, particulate matter or other regulated air pollutants from Cattle Operations exists, and it is doubtful whether a reasonable quantification of such biological byproduct and secondary “emissions” at open air operations is practical, necessary or desirable. Reasonable control of fugitive emissions from Cattle Operations is accomplished through the application of best or reasonable management or control practices (“Best Management Practices” or “BMPs”) which need no quantification for use or enforcement.

IV. ABILITY TO DETERMINE REPORTABLE QUANTITIES AND PERMIT APPLICABILITY THRESHOLDS

The requirement of CERCLA and EPCRA to report releases of ammonia and hydrogen sulfide into the air is subject to the determination that a

“reportable quantity” is emitted. For both CERCLA and EPCRA, the reportable quantities (“RQ”) of ammonia and hydrogen sulfide are 100 pounds per 24-hour period. 40 C.F.R. §302.4, Table 302.4 & 40 C.F.R. part 355, App. A. Although the ammonia 100 pound RQ was originally derived from the Clean Water Act, EPA stated in its 1985 Final Rule clarifying RQs under CERCLA that the RQ of 100 pounds applies to emissions into the air or water. See 50 Fed Reg. 13456 (Apr. 4, 1985). The Clean Air Act’s permit requirements for major sources also contain thresholds for nonfugitive, and, at a few listed sources (none of which are included in Cattle Operations), include fugitive emissions, discussed below under Clean Air Act Permit Requirements.

EPA has a standard emissions factor document for use in estimating emissions from a wide variety of operations. The document, “Compilation of Air Pollutant Emission Factors” is generally known as “AP-42”. Its estimates generally reflect testing and sampling of several representative sources, giving an average that may be used for broad estimation purposes, but is not expected to be accurate for any particular operation. EPA posts current information and updates on AP-42 on its web site. AP-42 covers the “Food and Agriculture Industries” in Chapter 9. Section 9.4 of Chapter 9 covers “Livestock & Poultry Feed Operations.” As of October 30, 2003, section 9.4 stated that “[a]t this time, there is no “AP-42 factor” or estimation method for this category.” (July 14, 1999 update). The document does reference “Development and Selection of Ammonia Emission Factors” (EPA 1994) which does make emission estimates for ammonia from livestock operations, but does not adopt those factors as standard emission factors for regulatory use. The Table of Contents of AP-42 to section 9 references the final report of the National Academy of Sciences (“NAS”) Committee on Air Emissions from Animal Feeding Operations. The purpose of the report is to assess the scientific issues involved in estimating air emissions from animal feeding operations. The report concludes that there is insufficient information for adequate estimation of those emissions at the current time. “Air Emissions from Animal Feeding Operations: Current Knowledge, Future Needs” (NAS 2002), ch. 4 at pp.74-97. In addition, there have been various studies in Iowa, Kansas, and elsewhere making crude estimates based on material balance and other techniques. None of these efforts at estimation have been judged sound enough by EPA or the scientific community to support regulatory determinations or emission estimates.

The measurement of ammonia from flatulence and decomposition of manure and urea, as well as particulate matter, volatile organic compounds and other substances from Cattle Operations in open air pastures and feed lots is problematic at best. Direct measurement is not possible or feasible. Because the pollutant is dispersed in the air before measurement (in other words, already a “cloud”), the wind speed and direction, pressure and temperature, stability and mixing characteristics of the atmosphere affect the emission, and measurement depends on capturing the whole cloud in time and space. A vertical and horizontal array of tens of instruments upwind and downwind of the source being measured covering sufficient area is necessary, as is a complete set of

meteorological instrumentation and data (wind speed, direction, mixing height, pressure, etc.). Because these arrays still only measure concentrations at a relatively few points in a cloud of indeterminate size and shape over short periods of time, they are subject to very large error. In order to estimate the quantity of emissions, the concentration data from the few points in the array must be mathematically modeled, spatially averaged, and projected to simulate the cloud's form and density. Because of the impracticality and cost of operating these large arrays, and their large margin of error, quantitative emission limits for open-air fugitive operations are not a practical air pollution control technique or enforcement tool. Typical air pollution control regulations for open-air fugitive sources prescribe a menu of best management practices or reasonable control techniques that may be applied, such as collection of loose dust using loaders and box blades, speed limits for vehicles on dirt roads, wind breaks, chemical dust suppressants on roads and heavily used areas, and , where reasonably available and not hampering good conservation practice in areas with short water supplies, the watering of roads, pen surfaces and dusty work areas using trucks or sprinklers, for which quantification is unnecessary.

The ammonia produced by cattle and the ammonia and hydrogen sulfide potentially produced by some ponds with some sulfur will vary with characteristics of the ration fed to the cattle, the breed of cattle, the acidity and other conditions of the digestive tract, hydration, heat, and the characteristics of the water in the retention ponds. In other words, there are a large number of variables, each of which would have to be held constant while others are varied, in order to derive emission factors. This is impractical. Even with inanimate, inert particulate matter, like fugitive dust, the error in estimation of the amounts emitted in open-air land disturbance has proved to be often an order of magnitude or more - - hardly adequate or appropriate for regulatory determinations or the imposition and enforcement of quantitative controls.

The possible use of some of the estimated emissions quantifications to date has been of concern to representatives of agriculture. Congressman John Boehner expressed that concern to EPA Administrator Christine Todd Whitman, who responded in a letter to Congressman Boehner dated November 9, 2001 that:

“As you note in your letter, **we do not currently have sound emission estimates to support regulatory determinations for animal agriculture.**”

(Emphasis added.)

Administrator Whitman went on to note the work of the National Academy of Sciences relating to estimation of agricultural emissions and EPA's work with the Department of Agriculture's Air Quality Task Force, stating that “[w]e will use this [NAS] study to develop scientifically valid emission estimates that can be used to inform our regulatory policy decisions.” Administrator Whitman also took note of the Agricultural Air Quality Task Force recommendation that EPA

defer implementation of Clean Air Act and CERCLA programs, stated that she was reviewing the recommendation, and that “I agree that any actions we take need to be based on sound science.” Indeed, the EPA 1994 ammonia emission factors document referenced, R. Battye et al., *Development and Selection of Ammonia Emission Factors: Final Report* (Prepared for U.S. Environmental Protection Agency, 1994) concludes that the national inventory may have left out half of the actual ammonia emissions: “Recent research indicates that these two categories [undisturbed soils and biomass burning, which were not estimated] may contribute significantly (up to half) to the global budget of NH₃ emissions.” (*id.* at p. x)(Emphasis added).

It is fair to conclude that there is not a valid or sound scientific basis for the estimation of fugitive ammonia, hydrogen sulfide, particulate matter, or other emissions from Cattle Operations, nor sound emissions estimates to support regulatory determinations, based on no less authority than EPA’s immediate past Administrator, the NAS final review, and EPA’s latest updates and assessments. Thus there is no accepted method for reasonable quantification of fugitive ammonia, hydrogen sulfide, particulate matter or other emissions from Cattle Operations. There is no sound or reasonable basis for making a regulatory determination whether the ammonia or hydrogen sulfide from fugitive emissions from Cattle Operations do or do not exceed the reportable quantities of those substances from Cattle Operations. Because Cattle Operations are not a listed source, and by definition for purposes of this White Paper their non-fugitive emissions do not exceed the thresholds for Clean Air Act major sources in attainment or unclassifiable (Prevention of Significant Deterioration) or nonattainment (NSR) areas, nor for Title V Operating permits, there is no need to quantify their fugitive emissions for purpose of determining Clean Air Act permit applicability requirements.

As confirmed by immediate past Administrator Whitman, of EPA, there are no sound emissions estimates to support regulatory determinations, and any actions taken need to be based on sound science that currently does not exist. This view is supported by (1) the fact that there are no AP-42 emission factors for Cattle Operations (even though there are studies making estimates of ammonia emissions from such operations in the AP-42 documents), and (2) the final report of the NAS committee working on the evaluation of air emissions from such operations. Given the lack of sound and accepted methods for determining whether there are reportable quantities of ammonia, hydrogen sulfide, or particulate matter from Cattle Operations, there appeared to be no reasonable basis for enforcement of CERCLA’s or EPCRA’s release reporting requirements on Cattle Operations, nor any sound basis for reporting estimates of those hazardous substances. Fugitive emissions from Cattle Operations are not required to be quantified for purposes of Clean Air Act major source permits (PSD, NSR, or Title V). While fugitive emissions of hazardous air pollutants are required to be included in determining major source status for purposes of Title V permits, neither ammonia nor hydrogen sulfide are hazardous air pollutants,

and therefore not required to be included in Title V permit applicability determinations.

V. CLEAN AIR ACT PERMIT REQUIREMENTS APPLICABLE TO CATTLE OPERATIONS

As noted above in the sections defining Cattle Operations for purposes of determining the applicability of Clean Air Act permit requirements, and the section on the fugitive and non-fugitive emissions from Cattle Operations, the emissions from Cattle Operations are composed of:

- (1) fugitive emissions, primarily of particulate matter from wind and hoof action on pen surfaces and open or disturbed areas, but also including ammonia, hydrogen sulfide, methane, trace amounts of volatile organic compounds and other gases from flatulence, urination, defecation, and bacterial and anaerobic decomposition of manure and urea;
- (2) non-fugitive emissions from stationary sources that in the aggregate are less than the major source permit thresholds.

The Clean Air Act permit programs we have considered include those for Prevention of Significant Deterioration (“PSD”), 42 U.S.C. § 7470 et seq., 40 C.F.R. §§ 51.166 & 52.21, those for nonattainment New Source Review (“NSR”), 42 U.S.C. § 7501 et seq., 40 C.F.R. §§ 51.165, 52.24, and Appendix S to Part 51, and the Title V operating permit program 42 U.S.C § 7661 et seq., 40 C.F.R. part 70. These are the Clean Air Act’s permit programs for “major stationary sources” and “major modifications” to such sources.

Fugitive emissions do not count in determining whether Cattle Operations exceed the 100 ton per year, 250 ton per year, or other permit thresholds applicable under the PSD, NSR or Title V permit programs. 42 U.S.C. § 7602(j), 40 C.F.R. §§ 51.165(a)(1)(iv)(A)(2)(C), 51.166(b)(1)(iii), 52.21(b)(1)(iii), 52.24(f)(4)(iii). 70.2 (subsection (2) of definition of “major source”) as amended on November 27, 2001). Fugitive emissions only count towards determining those permit thresholds for certain “listed” sources.

The “listed” sources include specific listed sources such as power plants, refineries and smelters, but also include sources for which either New Source Performance Standard (“NSPS”) or National Emission Standards for Hazardous Air Pollutants (“NESHAPs”) were applicable as of August 7, 1980. *Id.* Cattle Operations are not among the specifically listed sources. The sources for which NSPS and NESHAPs had been adopted and were in effect as of August 7, 1980 include only one category that appeared to us to have possible presence at or application to Cattle Operations, namely “grain elevators.” 40 C.F.R. 60.300. These are defined in turn to include “grain terminal elevators” (which

specifically exclude “livestock feedlots”), and “grain storage elevators.” 40 C.F.R. § 300(a).

The latter definition includes “any grain elevator located at any wheat flour mill, wet corn mill, dry corn mill (human consumption), rice mill, or soybean oil extraction plant , which has a permanent grain storage capacity of 335,200 m³ (ca. 1 million bushels).” 40 C.F.R. §60.301(f). We have reviewed the customary, ordinary, accepted meaning of these terms, and their standard meaning and use in the agricultural community, with knowledgeable NCBA members. The only category of potential applicability was “wet corn mill.” The facilities at Cattle Operations are not, in the opinion of NCBA members, “wet corn mills.”

The reason that fugitive emissions are not counted in making Clean Air Act permit applicability threshold determinations, and have been excluded as described above, is the decision of the Court of Appeals for the District of Columbia in *Alabama Power Co. v. Costle*, 636 F.2d 323, 368-370 (D.C. Cir. 1979), where the Court held that EPA must conduct a rulemaking pursuant to section 302(j) of the Clean Air Act, 42 U.S.C. § 7602(j) prior to including fugitive emissions in the definition of “major stationary source” for permitting purposes under the PSD program. EPA has followed that decision’s requirement in its nonattainment NSR and Title V, as well as its PSD permit programs. EPA has not conducted a rulemaking for the purpose of including air emissions from Cattle Operations or from agricultural operations. In our opinion, it would not be a valid exercise of EPA authority to include such emissions without first conducting the kind of tailored, special rulemaking the Court contemplated in the *Alabama Power* case. *Id* at 379-370, fn. 19.

“Hazardous air pollutants” (“HAPs”) are not covered by the PSD permit program. They were specifically excluded from that program by the Clean Air Act Amendments of 1990. 42 U.S.C. § 7412. Title V permits are required for “major sources” of hazardous air pollutants, i.e., those with emissions, including fugitive emissions, over 10 tons per year of any single HAP or 25 tons per year of all HAPs combined. Neither ammonia nor hydrogen sulfide is a HAP. It is NCBA’s understanding from the environmental managers of NCBA members that there are no other HAPs exceeding these thresholds from Cattle Operations. It is also NCBA’s understanding that there is no reasonable basis for estimation or quantification of the trace amounts of HAPs that may be involved in Cattle Operations.

Cattle Operations have not been listed as sources of HAPs, and no standards have been adopted for them under EPA’s so-called “Maximum Available Control Technology” (“MACT”) requirements under Title III and 40 C.F.R. part 63.

NCBA submits that Cattle Operations are properly categorized and regulated as “minor sources” that are not required to obtain PSD, NSR or Title V

permits, but may be required to obtain state “minor source” permits and to comply with state best management and control practice regulations.

Conclusion on CAA Major Source Permit Requirements.

Because the non-fugitive emissions from Cattle Operations do not exceed the permit applicability thresholds for PSD, NSR or Title V permits, those permits are not applicable to Cattle Operations. Cattle Operations are correctly classified as “minor sources.” Because most emissions from Cattle Operations are fugitive emissions, which are not counted toward permit applicability, there is no need to quantify those emissions for that purpose.

VI. ANALYSIS OF THE APPLICABILITY OF CERCLA AND EPCRA RELEASE REPORTING REQUIREMENTS TO CATTLE OPERATIONS.

Release Reporting Requirements of CERCLA and EPCRA Do Not Apply to Ammonia and Hydrogen Sulfide From Cattle Operations.

Our review of the provisions of the release reporting provisions of CERCLA and EPCRA, and their application to releases of ammonia and hydrogen sulfide from Cattle Operations, leads us to the conclusion that they do not apply to ammonia and hydrogen sulfide from Cattle Operations.

A. The Coverage And Purpose of CERCLA and EPCRA Release Reporting Requirements.

NCBA’s exhaustive review of the statutes themselves, their legislative history, and their interpretation by EPA and the courts over the course of more than 20 years, discovered no mention or indication that air emissions resulting from flatulence, belching, exhalation, or excretion of urine or manure or their bacterial decomposition, or substances in the air resulting from runoff that encounters and carries relatively small amounts of manure or urea into precipitation runoff retention ponds are covered by the release reporting requirements of CERCLA or EPCRA.. The terms of the statutes themselves, which cover “facilities” that “release” “hazardous substances” into the environment (discussed below) do not clearly or comfortably cover the biological and natural processes that result in ammonia and hydrogen sulfide at Cattle Operations. It is not a matter of broad or narrow reading of the terms of the statute, but whether those terms cover the biological and natural processes responsible for generation of ammonia and hydrogen sulfide at Cattle Operations at all. Such coverage is, NCBA believes, ambiguous at best, while the exception for “naturally occurring substances,” 42 U.S.C.A. § 9604(a) (3) (A) (discussed below) does seem to cover those processes.

The most fundamental guide to the meaning of any statute is an understanding of its purpose. As Judge Learned Hand stated in discarding the literal or “plain” meaning of a statute that was inconsistent with its purpose, “. .

statutes always have some purpose or object to accomplish, whose sympathetic and imaginative discovery is the surest guide to their meaning.” *Cabell v. Markham*, 148 F.2d 737 (2d Cir. 1945), *aff’d* 326 U.S. 404 (1945); *see also* *Billik v. Berkshire*, 154 F.2d 493, 494 (2d Cir. 1946): “Attention must always be given to what Congress sought to accomplish by the statute . . . ‘There is no surer guide in the interpretation of a statute than its purpose when that is sufficiently disclosed; nor any surer mark of oversolicitude for the letter than to wince at carrying out that purpose because the words used do not formally quite match with it’” (quoting *Federal Deposit Ins. Corp. V. Tremaine*, 133 F.2d 827, 830 (2d. Cir. 1943)). The Supreme Court has cautioned against reading the “plain” language of a statute to avoid frustrating the purpose of Congress and arriving at an absurd result, stating that: “The decisions of this Court have repeatedly warned against the dangers of an approach to statutory construction which confines itself to the bare words of a statute.” *Lynch v. Overholser*, 369 U.S. 705, 711 (1962).

We have first looked broadly at what Congress did intend to cover in CERCLA and EPCRA, and then more specifically at what purpose Congress had in requiring release reporting.

B. Activities and Substances Congress Intended to Cover.

CERCLA was passed in the wake of Love Canal for the purpose of dealing with the “legacy of hazardous substances and wastes which pose a serious threat to human health and the environment.” S. Rep. No. 99-73, at 12 (1985), and “to clean the worst abandoned hazardous waster [sic] sites in the country . . .” H.R.Rep. No. 99-253, Part 5, at 2 (1985). The legislative history contains a litany of references to “synthetic,” “man-made” chemicals, “chemical contamination,” and the results of “modern chemical technology” as the problems CERCLA intended to address. S. Rep. No. 96-848 at 2-6, 12 (1980); S.Rep. No. 99-11 at 1-2 (1985); S. Rep. No. 99-73, at 12 (1985); H.R. Rep. No. 99-253, part 5, at 2 (1985). It contains no reference to an intention to clean up manure or urea, or their byproducts, from cattle or any other agricultural operations.

In addition to clean up of hazardous waste sites such as Love Canal, the Senate committee stated that the legislation was intended to cover “spills and other releases of dangerous chemicals which can have an equally devastating effect on the environment and human health.” S. Rep. No. 96-848, at 5 (1980) and commented that such releases have resulted in the “loss of livestock and food products to contaminated drinking water and feed . . .” *Id.* It also noted that Superfund “may be used to compensate an agricultural producer . . . for loss” resulting from such releases of hazardous substances” *id.* at 78, and that such losses included injury to “livestock” *id.* at 79.

Congress also indicated the scope of the activities it intended to cover in the provisions it made for funding the “Superfund” to pay for cleanup. The tax it

imposed focused on “the type of industries and practices that have caused the problems that are addressed by Superfund;” Congress chose to impose the tax “on the relatively few basic building blocks used to make all hazardous products and wastes.”² H.R. Rep. No. 99-253, Part 1, at 141 (1985); S. Rep. No. 96-848, at 19 (1980). These building blocks, or chemical “feedstocks,” are comprised of petrochemicals, inorganic raw materials, and petroleum oil because “virtually all hazardous wastes and substances are generated from these [substances].” *See id.* at 20; *see also* S. Rep. No. 99-73, at 3 (1985) (“The taxable chemical feedstocks generally are intrinsically hazardous or create hazardous products or wastes when used.”); H.R. Rep. No. 99-253, Part 1, at 141 (1985). (“[T]he problems addressed by CERCLA are byproducts of productions processes that use these raw materials.”). Manure, urea, and their byproducts, are clearly not among these materials.

The fee is levied on feedstock chemicals manufactured or imported into the United States when they are sold or used “by the manufacturer, producer, or importer thereof.” *Id.* at 7 (emphasis added). By definition, this scheme does not include taxation of ammonia or hydrogen sulfide from livestock, or their wastes. Although not determinative, the taxation provision’s focus on chemical feedstocks supports the reasoning that Congress intended to regulate the sale or use of synthetic, man-made chemicals with CERCLA, not the generation of ammonia and hydrogen sulfide from Cattle Operations.

The taxation provisions of CERCLA also indicate that substances like ammonia, when used for agricultural purposes, are not covered within the scope of CERCLA. Specifically, “nitric acid, sulfuric acid, ammonia, and methane used to produce ammonia, when used to produce or manufacture fertilizer, ... [or] when used as a nutrient in animal feed,” are exempted from taxation. S. Rep. No. 99-11, at 69 (1985); *see also* S. Rep. No. 99-73, at 9 (1985). The exemption is based largely on the premise that “taxation of these compounds when used to supplement animal feed constitutes a burden on both the animal feed industry and the American agricultural sector which appears to be unnecessary.” *Id.* Like taxation, regulation of the agricultural sector in the form of reporting requirements for the release of ammonia or hydrogen sulfide from livestock manure and urea would arguably constitute an “unnecessary burden” on Cattle Operations.

Based on Congress’ repeated use of language evidencing its intent to provide a notification scheme for the release of hazardous substances produced

² The Internal Revenue Code lists the taxable chemicals and the amount imposed for each. *See* 26 U.S.C. § 4661(b). Relevant to this memorandum, ammonia is listed as a taxable inorganic raw material, with a tax of \$2.64 per ton. Hydrogen sulfide is not a listed taxable chemical. A tax is also imposed on crude oil and petroleum products “entered into the United States for consumption, use, or warehousing.” 26 U.S.C. § 4611-12.

as a byproduct of “modern chemical technology,” the absence of a CERCLA taxation provision applicable to Cattle Operations, and the exclusion of day-to-day fertilizer and pesticide application by the agricultural community (see below) from reporting requirements, a reasonable interpretation of CERCLA’s legislative history leads to the conclusion that Congress did not intend to include the routine fugitive emission of ammonia and hydrogen sulfide from Cattle Operations in CERCLA’s and EPCRA’s release reporting requirements. Moreover, to include ammonia and hydrogen sulfide emissions from flatulence and decomposition of urea or manure, while excluding similar day-to-day agricultural operations involving the spreading or distribution of man-made chemical fertilizers and pesticides would result in a burdensome, incongruous, and perhaps even absurd, outcome.

C. The Purpose of Release Reporting: A Trigger for Response Action.

The purpose of the release reporting provisions of CERCLA and EPCRA is to target releases of hazardous substances that present substantial threats to public health and the environment and that require immediate response by the proper officials in order to prevent or minimize their adverse impacts. The report is required to be filed “immediately,” a term that has been very strictly construed. A delay of 1 hour and 22 minutes has been held by EPA to be a violation of the CERCLA and EPCRA requirements. *See In Re: Royster-Clark, Inc. 2001 WL 1848806*. As the Senate Committee report noted in explaining the extension of CERCLA’s release reporting requirements to include notification to state and local officials under EPCRA, EPCRA’s release reporting requirements were intended to provide “immediate direct notification of State and local emergency response officials for releases of highly toxic substances, and particularly those determined by regulation potentially to require response on an emergency basis.” S. Rep. No. 99-11, at p. 8. In other words, the clear purpose of immediate release reporting is to provide authorities with the information needed for immediate response, if necessary.

In summary, CERCLA and EPCRA were intended to provide for the cleanup of hazardous waste sites such as Love Canal; CERCLA created the Superfund to clean up such sites through a tax on the chemicals and other substances from which the hazardous substances were derived. Finally CERCLA and EPCRA required immediate reporting of releases of hazardous substances that might imperil human health or the environment in order to allow federal, state and local authorities to respond to those threats in a timely fashion. As set forth below, the only mention of livestock operations in the course of consideration of this legislation was as a resource that needed to be protected from such hazardous substances, not as a source of such hazardous substances that needed to be regulated, reported, or taxed.

D. Relevant Exemptions from CERCLA.

In EPCRA, Congress, recognizing that “CERCLA response authorities are extremely broad . . .” excluded from the scope of the federal response authority the release or threat of release “of a naturally occurring substance in its unaltered form, or altered solely through naturally occurring processes or phenomena, from a location where it is naturally found.” 42 U.S.C. § 104(a)(3)(A); *and see also* S. Rep. No. 99-11, at 16 (1985). The Senate committee report clarified this exception from EPA’s response authority, noting that naturally occurring releases, such as “diseases or contamination resulting from animal waste (e.g. beaver excrement),” are excluded from the response program. S. Rep. No. 99-11, at 16 (1985). Thus naturally occurring animal waste, such as urine, urea and manure, in its unaltered form, or altered solely through naturally occurring process or phenomena, are excluded from EPA’s response authority.

The flatulence, urine, urea, and manure, and the releases that result from them at dry, open-air Cattle Operations fall, we believe, within the purpose and terms of this exemption from EPA’s response authority. Flatulence and the excretion of manure and urine from cattle are surely naturally occurring, and the location of that excretion is surely “where it is naturally found,” i.e. wherever the cattle happen to be, whether in a feed pen or a pasture. The manure and urine are unaltered. The precipitation and surface runoff affecting them are naturally occurring processes. The only change in the location of these animal wastes occurs when they are periodically removed from the cattle pens and recycled through composting and/or application to croplands. That movement does not, materially affect the bacterial decomposition of the manure or urea, which occurs independent of its removal, transportation, sometimes composting, and application to croplands as fertilizer. The “normal application of fertilizer” is separately excluded from the definition of CERCLA “releases” that require reporting. 42 U.S.C.A. § 101 (22).

E. Effect of the Exemption of Cattle Operations from Response Authority on Interpretation of CERCLA and EPCRA Release Reporting Obligations.

Generally, a statute should be interpreted as a whole, and the individual provisions should be analyzed in accordance with the object and policy of the entire law. *See Abramson v. U.S.*, 42 Fed. Cl. 621, 629 (1998) (citing *Kelly v. Robinson*, 479 U.S. 36, 43 (1986)). “In construing a statute, courts should not attempt to interpret a provision such that it renders other provisions of the same statute inconsistent, meaningless, or superfluous.” *Id.* (citing *Boise Cascade Corp. v. U.S.*, 942 F.2d 1427, 1432 (9th Cir. 1991)). To require a facility to report a release of a naturally occurring substance would not only be inconsistent with Congress’ clear intent under § 104 to exclude such substances from the federal government’s management under CERCLA and EPCRA, but it would also lead to the incongruous result of reporting releases under § 103 that would never be responded to under § 104.

Because the purpose of reporting a release under § 103 is to alert the proper authorities of the release so that they can best determine how to respond to the release, it would be superfluous to require reporting for a release that is statutorily excluded from the federal government's response authority. While the legislative history indicates that Congress only intended to cover modern chemical technology, synthetic chemicals and man-made processes and substances, even if CERCLA and EPCRA were interpreted to cover flatulence, manure, urine and their decomposition, the resulting ammonia and hydrogen sulfide from them falls fairly within the statutory exclusion of "naturally occurring substances" from response action.

If response action for those releases is prohibited, it then makes sense to interpret CERCLA § 103 reporting requirements not to include those substances and activities, because to do so would render the release reporting requirement of section 103 superfluous. EPA has so interpreted the "naturally occurring substance exemption" in the case of radionuclides from undisturbed lands. 63 Fed. Reg. 13460, 13462, col.2 (March 19, 1998), declaring that: "[r]eporting of naturally occurring radionuclide releases from undisturbed land holdings is unnecessary because CERCLA section 104(a)(3) generally precludes removal or remedial actions in response to a release "of a naturally occurring substances in its unaltered form or altered solely through naturally occurring process or phenomena, from a location where it is naturally found."

EPA has stated the purpose for release reporting notification under CERCLA, and its interpretation of authority for granting exemptions, in cases where the release does not already fall clearly within a statutory exemption, as follows:

"This purpose, as the Agency has previously stated on numerous occasions, is to require 'notification of releases so that the appropriate federal personnel can evaluate the need for a federal response action and undertake any necessary response (removal or remedial action) in a timely fashion.' [citation omitted] . . . Thus if the Agency determines that the federal government would never, or would only rarely, take a response action as a consequence of the harm posed by the release or because of the infeasibility of a federal response, a basis for an exemption from the section 103 reporting requirements may exist."

54 Fed. Reg. 22524, 22528.

Based on this interpretation, EPA exempted release of naturally occurring radionuclides from large, generally undisturbed land holdings, such as golf courses and parks, along with those activities that involve the disturbance of large areas of land, such as farming or building construction." *Id.*

With respect to disturbance of large areas of land, such as farming that caused releases of “reportable quantities” of radionuclides, EPA concluded that those “activities rarely would pose a hazard to the public health or welfare or the environment because releases would be dispersed widely in the environment at levels not much (if at all) above natural background. *Id.*

In the same rulemaking EPA exempted “the dumping of coal and coal ash, as well as radionuclide releases to all media from coal and coal ash piles, at utility and industrial facilities with coal-fired boilers.” *Id.* EPA explained that it did so because “the Agency believes that the submission of individual reports from each industrial and utility facility with coal and coal ash piles may not be consistent with the purposes of the section 103 reporting requirement.” *Id.* at 22529. (Emphasis added). It found that the concentration levels emitted from these piles

“will always be emitted continuously at low levels spread over large areas” [and] “never will be emitted at a high rate or in an unusually large amount as the result of a sudden episodic release . . . Perhaps more importantly, however, a response action (i.e., removal or remedial action) under CERCLA does not appear to be the most appropriate federal regulatory response to radiation releases that are (1) similar in amount and concentration across an entire sector of industry; (2) pose acceptable exposure risks; and (3) disperse quickly in the environment such that a response is not necessary to cleanup the accumulation of what has already been released.”

Id.

On March 19, 1998, EPA broadened these exemptions from release reporting requirements for radionuclides for land disturbance “to include land disturbance incidental to extraction activities at all mines except limited categories with elevated radionuclide concentrations. 63 Fed. Reg. 13460, 13462, col. 2. It stated its authority to do so as follows:

CERCLA sections 102(a), 103, and 115 together provide EPA with authority to grant administrative reporting exemptions. Such exemptions may be granted for releases of hazardous substances that pose little or no risk or to which a Federal response is infeasible or inappropriate. Requiring reports of such releases would serve little or no useful purpose and could, instead, impose a significant burden on the Federal response system and on the persons responsible for notifying the Federal government of the release. Through such reporting exemptions, therefore, the Federal response system is able to more efficiently implement CERCLA and EPCRA and more effectively focus on reports of releases that

are more likely to pose a significant hazard to human health and the environment.

63 Fed. Reg. 13460 (Mar. 19, 1998).

EPA's interpretation of the scope of the naturally occurring substance exemption, and its authority to broaden it to cover other activities where response action is inappropriate, infeasible and unnecessary, have evident application and relevance to Cattle Operations. EPA's determination that activities that fall within section 104(a)(3)'s exemption from response action need not report under section 103 means that if Cattle Operations fall within section 104(a)(3)(A)'s exemption of naturally occurring substances, there is no need to report such releases under section 103 of CERCLA.

F. The Release Reporting Requirements of CERCLA and EPCRA, Read Fairly and In Accordance with their Purpose, Do Not Cover Cattle Operations.

The CERCLA and EPCRA definitions and reporting requirements are largely the same and have been described as "inextricably intertwined." *In re: Thoro Products Co.* 1992 WL 143993 *10 (E.P.A.). In fact, for hazardous substances such as ammonia and hydrogen sulfide listed under both CERCLA and EPCRA, the reporting requirements of CERCLA are the trigger for reporting under EPCRA 42 U.S.C. §11004(a); if the release of a hazardous substance is exempt from CERCLA reporting requirements, it will be exempt from EPCRA requirements as well. *Id.* CERCLA section 103(a) requires release reporting from "facilities" that release "hazardous substances" into the "environment." "Facilities" cover a broad range of buildings, installations, impoundments, and areas, all of which are subject to the condition that they are "where a hazardous substance has been deposited, stored, disposed of, or placed or otherwise come to be located . . ." 42 U.S.C. 9601(9). None of these terms would seem to apply to the generation of ammonia or hydrogen sulfide from flatulence or the excretion by cattle of urine or manure, nor to their bacterial decomposition. In other words, those biological processes do not fall within the normal meanings and uses of "deposit, storage, disposal or location" of ammonia or hydrogen sulfide. Those statutory terms all seem to connote the activity and involvement of humankind, not a naturally occurring biological process such as excretion by cattle of manure and urine and its biological decomposition into ammonia, or anaerobic decomposition into hydrogen sulfide.

The term "release" includes "any spilling, leaking, pumping, emitting, emptying, discharging, injecting, escaping, leaching, dumping, or disposing into the environment (including the abandonment or discharging of barrels,

containers, and other closed receptacles containing any hazardous substance or pollutant or contaminant) . . .” 42 U.S.C. 9601(22). Again, none of these terms would normally be used to describe the excretion of urine or manure from cattle on feed pen surfaces or the ground; each of these terms connotes anthropomorphic causation, not biological excretion and bacterial decomposition.

The “environment” 42 U.S.C. § 9601(8), however, clearly includes the ambient air to which the general public has access, as well as outdoor areas. We assume that any amounts of ammonia or hydrogen sulfide that may be generated at Cattle Operations could be transported off the property.

EPCRA’s definition of “facility” includes:

all buildings, equipment, structures, and other stationary items which are located on a single site or on contiguous or adjacent sites and which are owned or operated by the same person (or by any person which controls, is controlled by, or under common control with, such person).

42 U.S.C. 329(4).

EPCRA notification is only required for release from facilities where a hazardous substance is produced, used or stored. Again, the terms “buildings, equipment, structures and other stationary items” do not comfortably or clearly include cattle feeding, roaming, and cavorting in feed pens or pastures, and the “extremely hazardous substance” resulting from their excretion of urine and manure and its bacterial or anaerobic decomposition do not comport with ordinary notions of the “production, storage, or use” of a “hazardous chemical” intended to be covered by EPCRA. Indeed, the definition of “hazardous chemical” excludes “any substance to the extent it is used in routine agricultural operations.” In our view, neither hydrogen sulfide nor ammonia that disperses as a gas from flatulence, urination, defecation, or bacterial or anaerobic decomposition, is “applied, administered, or used” in routine agricultural activities. However, if EPA were to view those gases as produced, stored or used within EPCRA’s meaning, they would surely also be viewed as routine agricultural activities. There is nothing much more routine for cattle than urinating and defecating.

At the very least, there is a lack of plain and clear meaning and coverage of Cattle Operations by the bare words of these statutes. When that is the case, it is necessary to turn to the purpose of the statute as the touchstone of its meaning and to the legislative history to determine if there was an intent to cover Cattle Operations. As described above in seeking to discover the purpose of CERCLA and EPCRA, their coverage, and particularly the purpose of their release reporting requirements, those statutes repeatedly refer to modern chemical

technology, synthetic chemicals, and hazardous substances and wastes resulting from human activity.

The references to agriculture in the legislative history refer to Cattle Operations as a resource to be protected and compensated for loss rather than as operations which are a source of hazardous wastes to be regulated. To the extent there is mention or explicit treatment of agricultural activities or livestock, it is to exempt such activities as the “normal application of fertilizer.” 42 U.S.C. 9601(22)(D). The legislative history of that provision reflects Congressional awareness that chemical fertilizers did contain hazardous substances, but exempted them in normal use in agriculture. The removal, transportation, composting, and application to croplands of (1) manure and (2) sedimentation and retention pond liquids and soils as fertilizer, may well be covered by this exemption from the definition of “release” even if they are thought to be covered by the term “facilities.” As noted above, it would be incongruous, if not patently absurd, to construe the coverage of CERCLA and EPCRA release reporting to exempt the application of pesticides and chemical fertilizers, and routine agricultural operations, but to treat flatulence, urination and defecation as “releases” of “hazardous substances” from “facilities.”

VII. CONCLUSION ON CERCLA AND EPCRA RELEASE REPORTING APPLICABILITY.

In conclusion, NCBA believes that CERCLA and EPCRA release reporting requirements when read fairly and in accordance with their purpose, and consistent with the other provisions of the statute, do not apply to Cattle Operations as described and defined above. In addition, NCBA believes that ammonia and hydrogen sulfide from Cattle Operations either fall within the naturally occurring substances exemption from EPA’s response authority, and therefore do not require reporting consistent with EPA’s prior interpretations, or fit the criteria under which EPA has exempted other activities where response action is not appropriate or feasible, such as release of reportable quantities of radionuclides from mines, farming and land disturbance.

In light of these conclusions, NCBA does not believe that it is appropriate to treat Cattle Operations as covered by or subject to enforcement for CERCLA or EPCRA release reporting violations. To the contrary, NCBA believes it is entirely appropriate to treat Cattle Operations as not covered by CERCLA and EPCRA release reporting and response authorities.

NCBA did consider advising its several thousand members to file the notices and reports under CERCLA’s and EPCRA’s release reporting requirements. However, even if Cattle Operations were eligible for “continuous release” reporting, the cost and burden of developing the information required, and updating it, would be very great. More to the point, however, is the fact that the reports would never lead to any response action, and would be sheer waste.

The problem presented by the reporting alternative is that there is simply no sound basis for deciding which operations should report and which should not, nor how much and what they should report. That alternative likewise seems unjustified by either the statutes themselves, which do not clearly cover Cattle Operations in the first place, and by the exemptions, which seem likely to cover the generation of ammonia and hydrogen sulfide as naturally occurring releases that are exempt from the response actions that are intended by CERCLA and EPCRA to be triggered by release reporting. Indeed, the most that would seem to be justified is a request to EPA to clarify that CERCLA and EPCRA release reporting requirements do not apply to Cattle Operations, or, failing that, that EPA create an exemption from release reporting similar to those for other releases of reportable quantities of hazardous substances for which response action is inappropriate, infeasible, and unnecessary such as that for radionuclides from farming.

Testimony

on behalf of the

National Cattlemen's Beef Association, Public Lands Council

with regards to

**"The Impact of Federal Environmental Regulations and Policies on American Farming and
Ranching Communities"**

submitted to the

United States Senate
Committee on Environment and Public Works

John Barrasso, Chairman

submitted by

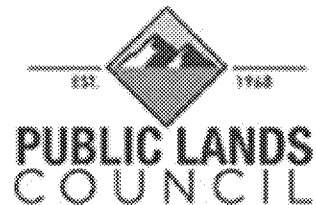
Niels Hansen
PH Livestock
Member

National Cattlemen's Beef Association, Public Lands Council

February 7, 2018
Washington, DC



National Cattlemen's
Beef Association



Good morning, my name is Niels Hansen. I'm a third generation rancher from Rawlins, Wyoming. The family ranch was started in the 1890s as a sheep and remount horse ranch. Over the years my family changed from raising horses to raising cattle and in 1984 made the final change from a cow/calf, sheep operation to a cow/calf/ yearling operation, and the ranch continues to be totally family owned and operated.

I am the immediate past president of the Wyoming Stock Growers Association, the current Secretary/Treasurer for the National Public Lands Council and a past Chairman of the Wyoming State Grazing Board. I'm testifying before you today representing family ranchers throughout the country operating on both private and public lands, all of whom have a stake in protecting the environment in which they live and work. Thank you Chairman Barrasso and Ranking Member Carper for allowing me to testify today on the impact of federal regulations and policies on American farming and ranching communities.

U.S. ranchers own and manage considerably more land than any other segment of agriculture— or any other industry for that matter. Ranchers graze cattle and sheep on approximately 666.4 million acres of the approximately 2 billion acres of the U.S. land mass. In addition, the acreage used to grow hay, feed grains, and food grains add millions more acres of land under cattlemen's stewardship. Some of the biggest challenges and threats to our industry come from urban encroachment, natural disasters, and government overreach. Since our livelihood is made on the land, through the utilization of our natural resources, protecting the land not only makes good environmental sense; it is fundamental for our industry to remain strong. Cattle producers pride themselves on being good stewards of our country's natural resources. We maintain open spaces, healthy rangelands, provide wildlife habitat and feed the world. Despite these critical contributions, our ability to effectively steward these resources is all too often hampered by excessive federal regulations like the ones we are discussing today.

When we talk of overly-burdensome regulations, we always need to talk about the Environmental Protection Agency (EPA). The 2015 Waters of the United States (or "WOTUS") Rule continues to be a top concern for cattle producers as long as it remains on the books. I am extremely concerned about the devastating impact this rule could have – not only on my own ranch, but on cattle operations across the United States. As a livestock producer, the 2015 WOTUS Rule has the potential to negatively affect every aspect of my operation by placing the regulation of every tributary, stream, pond, and dry streambed in the hands of the federal government, rather than the states and localities that understand Wyoming's unique water issues. The overly broad standards of the 2015 WOTUS definition, combined with its seriously ambiguous language create more questions than answers. I look forward to the rescission and replacement of the 2015 WOTUS Rule under Administrator Scott Pruitt. Just last week, the EPA under Mr. Pruitt's leadership issued the WOTUS "delay rule" which gives the Agencies breathing room to repeal and replace without concern for the 2015 Rule becoming effective law for two years. Any definition of "waters of the United States" should allow me to determine, without spending thousands of dollars on consultants, engineers, and attorneys, whether I have a federally regulated waterbody on my land.

While WOTUS is a significant concern for American cattle producers, it is just the tip of the iceberg for environmental regulations that impact our industry. Another pending requirement is CERCLA and EPCRA reporting, which will require farmers and ranchers to report manure odors

to the government for emergency response coordination. Let me say that again because the absurd bears repeating— the CERCLA and EPCRA reporting requirements force farmers and ranchers to report manure odors to the government so the government can coordinate an emergency response to the manure odors.

It shouldn't need to be said, but Congress never intended these laws to govern everyday farm and ranch activity. In 2008, the EPA exempted most livestock operations from these reporting requirements. This exemption was put in place by the Bush W. Administration and defended in court by the Obama Administration for eight years. However, in April 2017, environmental activist groups won their lawsuit, eliminating these exemptions for agriculture. When the mandate issues, nearly 200,000 farmers and ranchers will be on the hook to report low-level livestock manure odors to the government. To clarify that Congress never intended for livestock producers to report their low-level manure smells to the National Response Center, a change in the law is necessary.

Importantly, emergency responders see no value in receiving continuous release reports from livestock operations. Obtaining this information provides no benefit, and does not allow responders to be more prepared or safer in an emergency situation. In fact, these reports have the opposite effect - inhibiting responders' ability to do their job effectively and limiting vital resources. The sudden influx of agricultural reports will significantly hinder emergency response coordination and response capability. The National Association of SARA Title III Program Officials, which represents state and local emergency response commissions, notes that continuous release reports "are of no value to [Local Emergency Planning Committees] and first responders" and that the reports "are generally ignored because they do not relate to any particular event." The U.S. Coast Guard stated that early calls from farmers have "increased [initial notifications] from approximately 100-150 calls per day (not associated with air releases from farms) to over 1,000 phone calls per day." This influx has negatively impacted the Coast Guard's ability to coordinate responses for *true* emergencies. The Coast Guard further indicated the abundance of farm calls meant that "wait times have been up to two hours for calls, many of which require immediate attention". CERCLA and EPCRA were intended to focus on significant events like spills and explosions, not routine emissions from farms and ranches. As you can see, these reporting requirements have already begun to hurt responders' ability to do their job to protect the public health and environment. When the reporting mandate issues, the floodgates will open, crippling America's first line of hazardous emergency defense.

Information related to farm and residence location information must be protected. Unfortunately, the federal agencies handling it have an established record of misuse and blatant disregard for privacy laws. Many of the families who manage livestock operations live on their farms, so any data required by the government, like the data required for CERCLA and EPCRA reporting, creates a situation ripe for abuse. In addition to general information availability concerns, cattle producers also face significant risk of trespass and property damage. The widespread collection and dissemination of farm information by the government will put the privacy of producers and safety of our food system at risk, as individuals will have unfettered access to farm location data. Additionally, government agencies should not use aerial surveillance, by manned or unmanned aircraft, to conduct environmental enforcement actions. These type of governmental activities, simply put, further engender distrust between farmers and the federal government and put our farmers and ranchers at risk. Technological progress necessitates the

progression of the law, to ensure that farmers and ranchers' privacy is protected from drone use by both public and private parties.

Another regulation is the Spill Prevention, Control, and Countermeasure (or “SPCC”) rule for farms, which requires farmers to develop and certify a control plan and install secondary containment structures for oil storage. This is a regulation that originally applied to oil refineries that now applies to farms and ranches. While the original scope of the law is well-intended, these requirements create an undue burden on farmers and ranchers, who are located in the most remote parts of the country and need oil storage to power our farm equipment. Senator Fischer was instrumental in providing much-needed regulatory relief for farmers by championing language in the 2016 WIIN Act. But more can be done to reduce this unnecessary burden for our nation’s farmers and ranchers.

Cattle producers throughout the country continue to suffer the brunt of regulatory and economic uncertainty due to the abuse of the Endangered Species Act. Simply put, the Endangered Species Act is broken. Years of abusive litigation by radical environmental groups have taken a toll, and the result is a system badly in need of modernization. Today more than two thousand species throughout the world are listed as either Threatened or Endangered, with new petitions stacking up by the hundreds due to groups that have set up “petition assembly lines” to churn out new filings by the dozen. When the Fish and Wildlife Service fails to respond to this avalanche of procedural paperwork, the groups sue, tying up the court system and sapping the agency of money that should be used for species recovery and delisting efforts. Similar legal challenges hamper the process at every turn, particularly regarding the delisting process. In the current environment, it’s almost a foregone conclusion that even the most scientifically sound delisting proposal – for a species that has far surpassed recovery goals - will immediately draw legal challenges drawing the process out needlessly.

Despite the crippling impacts to our industry, it is our position that modernization of the Endangered Species Act must be addressed in a bipartisan manner. It is in this spirit of bipartisan problem-solving that PLC and NCBA participated heavily in the Western Governor's ESA Initiative led by Wyoming Governor Matt Mead. This multi-year effort included stakeholders from across the spectrum and resulted in a set of commonsense recommendations to this body last year that were approved by all but one of the sitting western governors. These recommendations truly represent a path forward on ESA and I sincerely hope this body incorporates them into their efforts on this critical issue.

Another equally important aspect to restoring science and sound policy-making to the forefront in environmental regulation are the Equal Access to Justice Act (EAJA) and the ESA Judgement Fund. These tools were created to give Americans the ability to pursue litigation against their government without fear of financial ruin. They were not created to serve as bank accounts for activist groups, yet that’s how they are being used. Every time the FWS settles a lawsuit or enters a settlement agreement like the infamous 2011 “mega-settlement” with the Center for Biological Diversity and WildEarth Guardians, these “factory litigants” receive a windfall profit, which only reinforces their action and encourages more abuse. Recently, an activist law group in Idaho called "Advocates for the West" claimed that a full third of their 2016 annual budget came from legal awards and judgments. Taxpayer funded judicial activism was not what the

creators of these tools intended. Congress must act to end this perverse incentive-based system and ensure that these funds are available to our veterans, social security recipients, and others in real need.

A big point I'd like you to take away from this hearing is that voluntary conservation really works for ranchers and the environment. A one-size fits all approach that accompanies top-down regulation does not work in my industry. Mandatory rules and requirements make it harder for ranchers to utilize the unique conservation practices that help their individual operations thrive. I believe that economic activity and conservation go hand in hand and we are always looking for new, innovative ways to provide tangible benefits to the environment, and help to improve our ranching lands.

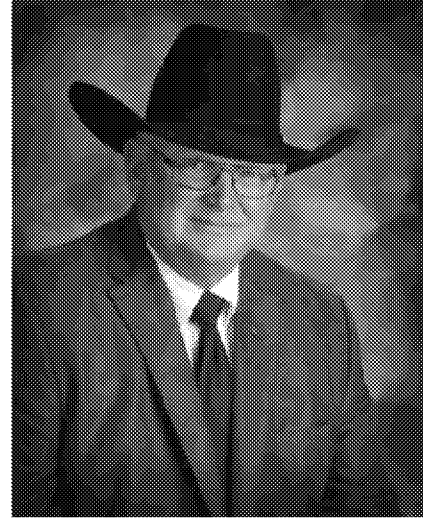
Ranchers represent the single greatest opportunity for real conservation benefit in the country and I conclude today with a plea on behalf of cattle and sheep producers across the country. Turn us loose. By freeing our industry from overly burdensome federal regulations and allowing us to provide the kind of stewardship and ecosystem services only we can, you will do more for healthy ecosystems and environments than top down restrictions from Washington ever can.

Thank you, I look forward to responding to any questions the committee may have.

Biography

Niels Hansen is a third generation rancher from Rawlins Wyoming. The family ranch was started in the 1890's as a sheep and remount horse ranch. Over the years the family has had to change from raising horses to raising cattle and in 1984 made the final change from a cow/calf, sheep operation to a cow/calf/ yearling operation but the ranch continues to be totally family owned and operated.

Working cooperatively with the University of Wyoming and the BLM, Niels has been a leader in developing and advocating for Cooperative Rangeland Monitoring. With over 20 years of monitoring data from the family ranch, he has shown the benefits of good land and livestock management for the land, the business, and the community.



Niels has served on a number of boards and committees at the state and local level including serving as an officer and member of the Christ Lutheran Church, the Rawlins/Carbon County Airport Board, and the Rawlins Search and Rescue where he uses his private pilot's license. He has served as the Chairman of the Rawlins and the Wyoming State Grazing Board. He was on the founding board and served 10 years on the Wyoming Animal Damage Management Board working to reduce conflicts with wild and domestic animals and the public. Niels served as the Chairman of the Wyoming Stock Growers Association (WSGA) Federal Lands committee through the Department of Interior Reform 94 effort and also Chaired the WSGA Wildlife committee. He has been a long time member of the WSGA Board of Directors and served one term as the Region 5 Vice-President. Niels will complete his term as President of the Wyoming Stock Growers in June.

In 2000 the ranch received the BLM Rangeland Management Stewardship Award. In 2001 they were named the Little Snake River Conservation District Cooperator of the Year award recipient and in 2004 was co-winner of the Wyoming Stock Growers Association Stewardship Award. Niels won the Wyoming Department of Agriculture – Excellence in Agriculture Award in 2007 and was inducted into the Wyoming Agriculture Hall of Fame in 2011.

Testimony

on behalf of the

National Cattlemen's Beef Association

with regards to

“Legislative Hearing on S. 2421, the Fair Agricultural Reporting Method Act”

submitted to the

United States Senate
Subcommittee on Superfund, Waste Management, and Regulatory Oversight
Committee on Environment and Public Works
Mike Rounds, Chairman

submitted by

Todd Mortenson
Mortenson Ranch
Member
National Cattlemen's Beef Association

March 8, 2018
Washington, DC



National Cattlemen's
Beef Association

Good morning, my name is Todd Mortenson. I live with my wife Deb on a ranch located in west central South Dakota in Stanley County, along the Cheyenne River. My grandfather, Ben Young, started the home ranch in the 1930s and added ground in Ziebach county when the Oahe dam was built, flooding their bottom lands in the late 1950s.

I am a member of the South Dakota Cattlemen's Association and the National Cattlemen's Beef Association, and I'm testifying before you today representing cattle producers and family ranchers, each of whom have a stake in protecting the environment. Thank you, Chairman Rounds and Ranking Member Booker, for allowing me to testify today on the issue of CERCLA reporting for agriculture, and the importance of the FARM Act.

American cattlemen own and manage considerably more land than any other segment of agriculture— or any other industry for that matter. Ranchers graze cattle on approximately 666.4 million acres of the approximately two billion acres that makes up the United States' land mass. In addition, the acreage used to grow hay, feed grains, and food grains add millions more acres of land under cattlemen's stewardship. Some of the biggest challenges to our industry come from urban encroachment, natural disasters, and government overreach. Since our livelihood is made on the land, through the utilization of our natural resources, protecting the land not only makes good environmental sense; it is fundamental for our industry to remain strong. Cattle producers pride themselves on being good stewards of our country's natural resources. We maintain open spaces, healthy rangelands, provide wildlife habitat and feed the world. But to provide all these important functions, we must be able to operate without excessive federal burdens, like the one we are discussing today.

Farmers and ranchers truly are America's original environmentalists. In fact, I would say we care more than anyone about the land we manage, because our operations directly impact not only the health of our livestock, but the water we drink and the air we breathe. I work hard to implement conservation practices that improve the environmental sustainability of my operation, ensuring that I'll be able to pass my ranch on to the next generation. For example, we move cattle to the uplands during summer months, allowing increased native plant growth and decreased sediment flow through ranch creeks. Additionally, in the spring, our herds graze on grasses in riparian areas while stamping seeds into the ground to help increase future vegetation growth.

While I fully support conservation practices that benefit and improve environmental quality, I cannot support needless requirements that burden the agricultural community while providing no environmental or public health benefit. A prime example of this is the burdensome reporting requirement under CERCLA, which requires farmers and ranchers to report manure odors to multiple agencies within the federal government for emergency response coordination. On my pasture-based cow/calf operation, I manage 1,295 cattle on 19,000 acres of land. The concentration of emissions is extremely low, because my cattle are spread over such a large area. However,

CERCLA reporting requirements do not take concentration into account – only release. It makes no difference whether my cattle are spread over 10 acres or 10,000 acres. If my 1,295 cattle emit over 100 pounds of ammonia or hydrogen sulfide per day, I am required to report their emissions to the US Coast Guard and EPA. Our best estimation of how many beef cattle it takes to trigger the reporting requirement is 208 head of cattle. Clearly, I would fall under these reporting requirements.

It is clear that Congress never intended this law to govern routine manure odors from everyday farm and ranch activity. The EPA understands this and, in 2008, exempted agricultural operations from reporting requirements under the Superfund law. While the exemption was put in place by the Bush W. Administration, it was defended in court by the Obama Administration for eight years. In defending the exemption, the Obama EPA argued that Congress did not include an exemption for manure emissions because they never considered that these low-level releases would fall into the possible realm of regulation. However, in April 2017, environmental groups won their lawsuit when the D.C. Circuit court found that Congress provided no exemption for agriculture. When the mandate issues on May 1, 2018, over 200,000 farmers and ranchers will be required to report low-level manure odors to the federal government.

Reporting is no simple task. It is a three-step process that spans, at minimum, one year. The first step is an initial call to the Coast Guard, the agency tasked with coordinating emergency response for the nation's oil spills, chemical plant explosions, and other hazardous emergencies. The Coast Guard is on record stating that these reports do not help them at all – in fact, they only hurt their ability to respond to true environmental and public health emergencies. In a November 14, 2017 declaration to the D.C. Circuit Court, Director of Incident Management and Preparedness for the USCG Dana Tulis indicated that early reports from livestock operations "increased [call volume] from approximately 100-150 calls per day (not associated with air releases from farms) to over 1,000 phone calls per day."¹ This influx of non-emergency reports negatively impacts the Coast Guard's ability to coordinate response for true emergencies. The Coast Guard further indicated the abundance of farm calls meant that "wait times have been up to two hours for calls, many of which require immediate attention."

The initial call to the Coast Guard is followed by two written reports sent to the EPA, over the span of one year. These reports require specific, detailed information regarding my cattle's emissions – information that I simply don't have. Research in this area is limited, to say the least. Only two land-grant universities have completed studies related to calculating emissions from livestock on a per-pound basis, and the EPA has completed no research in the area.² Further, those who are considered experts in this area are not confident that available reporting methodologies

¹ Tulis Aff. 2 (*Waterkeeper Alliance v. EPA*, 853 F.3d 527 (2017)).

² R. Stowell and R. Koelsch, *Ammonia Emissions Estimator*, University of Nebraska-Lincoln (2009); S. Preece, N. Cole, and B. Auvermann, *Ammonia Emissions from Cattle Feeding Operations*, Texas A&M (2012).

should be widely depended upon. According to Dr. Rick Stowell, co-creator of the University of Nebraska Lincoln's Ammonia Estimator Worksheet, "While I can place some confidence in differentiating between a 1,000-head feedlot and a 200-head feedlot, given all of the variability involved on AFOs and in research, I would not place much confidence in saying that a 300-head lot is definitely emitting more NH₃ than the neighboring 200-head lot or that we can be certain that either is above or below the threshold."³ For pasture-based livestock, no research exists quantifying per-head ammonia or hydrogen sulfide emissions. However, research does indicate that ammonia emissions differ significantly based on diet and confinement. Requiring pasture-based operations to report using tools provided on EPA's webpage (research that focuses exclusively on grain-fed animals) is inadequate, and will lead to substantially inaccurate reporting. It should also be noted that this reporting requirement is not a "one and done" obligation. Any time I decide to increase the size of my heard, I have to file additional paperwork with the government.

In addition to concerns I have related to the accuracy of my reports, I also worry that I will be providing my specific residential location information to the EPA – an agency with an established record of farm location information misuse. The widespread collection and dissemination of farm location information by the government will put the privacy of producers and safety of our food system at risk, as individuals will have unfettered access to farm and residential location data. Many of the families who manage livestock operations live on their farms, so any data required by the government, like the data required for CERCLA reporting, creates a situation ripe for abuse.

To clarify these exemptions, Congress needs to change the law to reflect its intent that livestock producers are exempt from CERCLA reporting requirements. The FARM Act, introduced on February 13, 2018, provides the relief that farmers, ranchers, and first responders need under CERCLA, and carries strong bipartisan support, as was exhibited by the Bush and Obama Administrations. In 2018, its not often that Republicans and Democrats can agree on anything, and I for one am proud of you all for putting aside your differences and making your constituents a priority. CERCLA truly is one of our most vital environmental statutes – it provides the tools we need to efficiently and effectively cleanup releases that harm both the environment and public health. Unfortunately, we all know that environmental agencies are given low funding priority at both the federal and state level. The FARM Act will ensure that precious time and monetary resources are not siphoned from important cleanup efforts to address a paperwork requirement with no environmental or public health benefit.

In addition to maintaining my ranch, I also volunteer with the Hayes volunteer fire department and EMS First Responder in Stanley County, South Dakota. While I did not receive EPCRA reports from agricultural operations in 2009, because there are no large CAFOs in my county, the receipt of this paperwork would in no way improve my ability to do my job as an emergency responder.

³ Statement made by Dr. Rick Stowell in an email to Scott Yager, Chief Environmental Counsel for the National Cattlemen's Beef Association (Communication on November 7, 2017).

Rather, like the CERCLA reporting requirements, it would impose a burdensome paperwork requirement with no environmental or public health benefit. Rural emergency response teams are already stretched for time and resources – requiring additional, needless paperwork would only compound this burden.

Thank you for taking the time to hear my concerns, and for listening to livestock producers around the country. As the May 1, 2018 reporting deadline quickly approaches, only Congress can ensure that the agricultural community is protected from this reporting burden, the reliability of our emergency response coordination is maintained, and the integrity of the Superfund law is not degraded. The key to environmental sustainability is working together with stakeholders, not fighting us. Thank you for your time, and thank you for your support of the FARM Act.



National Association of SARA Title III Program Officials

Concerned with the Emergency Planning and Community Right-to-Know Act

June 1, 2017

The Honorable Scott Pruitt
Administrator
U.S. Environmental Protection Agency
1200 Pennsylvania Avenue, NW
Mail Code: 1101A
Washington, DC 20460

Re: CAFOs and Emergency Release Reporting

Dear Administrator Pruitt:

I am writing on behalf of the National Association of SARA Title III Program Officials (NASTTPO), which is made up of members and staff of State Emergency Response Commissions (SERCs), Tribal Emergency Response Commissions (TERCS), Local Emergency Planning Committees (LEPCs), various federal, state and local agencies, private industry and the vast number of volunteers that perform emergency planning and emergency response activities for their communities. Our membership is dedicated to working together with regulated facilities, transportation entities and communities at large to improve community preparedness for emergency events including hazardous materials releases.


NASTTPO over the past several years has had the opportunity to work with various industry groups on emergency preparedness related rulemaking programs at EPA. These experiences have taught us that the most important thing to LEPCs and first responders is not detailed regulatory requirements for a facility's relationship to these groups, but rather the simple act of open dialog and coordination. Following the DC Circuit decision in *Waterkeeper Alliance v EPA*, we have had meaningful and encouraging discussions with the U.S. Poultry and Egg Association along these lines. NASTTPO believes that open dialog and coordination can be more effective than release reporting for farms that do not handle quantities of EPCRA EHS chemicals but are nevertheless expected to report regarding animal manure management.

We have had experience with EPCRA emergency release reports as well as CERCLA continuous release reports from farms primarily regarding ammonia from animal manure management. These reports are of no particular value to LEPCs and first responders and they are generally ignored because they do not relate to any particular event. (This should be contrasted to the few farms that utilize gas chlorine for water treatment where emergency release reports are useful because they are event specific.)

LEPCs and first responders do not need more generic data. They need information that is locally relevant and upon which they can act. This goal is best obtained by a program that promotes coordination between the regulated facilities and these local groups. Recent discussions suggest that such a program involving farms may be achievable.

We are in favor of reducing regulatory burdens if coordination on the information needs of LEPCs and first responders occurs. The information we want from farms is community-specific. Only the LEPC and local first responders can determine what information they need from a farm as part of their emergency planning process. What we really need is coordination between the farm and local responders and LEPCs. We want them to talk to each other.

Thank you.



Timothy R Gablehouse

President

410 17th St, Ste 275

Denver CO 80202

(303) 572-0050

MEMORANDUM

March 7, 2018

To: Senate Committee on Environment and Public Works
Attention: Kusai Merchant

From: David M. Bearden, Specialist in Environmental Policy, dbearden@crs.loc.gov, 7-2390

Subject: **Fair Agricultural Reporting Method Act/FARM Act (S. 2421)**

This memorandum responds to your request for an analysis of the potential effects of amendments to the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) proposed in the Fair Agricultural Reporting Method Act or “FARM Act” (S. 2421), as introduced in the 115th Congress on February 13, 2018. The bill would exempt air releases of hazardous substances emitted by animal waste at farms from requirements under CERCLA to notify the National Response Center. These amendments also would have a bearing on the applicability of requirements under the Emergency Planning and Community Right-to-Know Act (EPCRA) to notify state and local officials of such releases. However, EPCRA may continue to apply to the reporting of releases of separately listed extremely hazardous substances that are not contingent upon reporting under CERCLA, unless these releases may be covered by an exemption under EPCRA in current law for substances used in routine agricultural operations.

Overview

Whether the reporting requirements of CERCLA and EPCRA should be applied to air releases of hazardous substances from animal waste has been a long-standing issue addressed in multiple hearings and legislation in Congress. The purpose of reporting releases under these statutes is to inform federal, state, and local emergency response officials if a response action were warranted to protect human health and the environment. Some have observed though that reporting may impose a compliance burden without a commensurate need if the relative risks of air releases would not warrant a response action in most instances. Although others may still value the information gained from reporting to evaluate sources of air emissions for regulatory planning or other purposes, such utility would be incidental to the response objectives of CERCLA and EPCRA. Potential disclosure of release reports to the public also has been an issue, but certain protections are available in current law for sensitive and confidential information.

During the George W. Bush Administration, the U.S. Environmental Protection Agency (EPA) finalized a rule in 2008 to exempt air releases of hazardous substances emitted by animal waste at most farms from reporting under CERCLA and EPCRA, because of its expectation that the relative risks would make a response action unlikely or impractical in most cases. EPA did apply EPCRA to require reporting from large concentrated animal feeding operations (CAFOs) based on the number and type of livestock, in response to some public comments expressing desire for the information. Litigation challenging EPA’s authority to create this administrative exemption led to a U.S. Court of Appeals for the D.C. Circuit decision in April 2017 (*Waterkeeper Alliance, et al., v. EPA*) that vacated the 2008 rule. In response to

petitions from EPA during the Trump Administration, the court subsequently stayed (i.e., delayed) the issuance of an order to lift the exemption in the 2008 rule until May 1, 2018.

EPA has released guidance that instructs farms to notify the National Response Center under CERCLA once the court issues its order, if air releases of hazardous substances emitted by animal waste are equal to or exceed reportable quantities.¹ The EPA guidance indicates that farms should not report releases to state and local officials under EPCRA though, based on the Trump Administration's interpretation that air releases from animal waste would be covered under the exemption for substances used in routine agricultural operations. The U.S. Court of Appeals April 2017 decision did not refer to this exemption.

If enacted into law, S. 2421 would amend CERCLA to provide an exemption from the reporting of air releases of hazardous substances emitted by animal waste at farms. In turn, this amendment would have the effect of exempting such releases of hazardous substances from reporting under EPCRA that is contingent upon reporting required under CERCLA. However, the potential applicability of EPCRA to air releases of separately listed extremely hazardous substances may depend on whether the Trump Administration's interpretation of the exemption for substances used in routine agricultural operations is challenged. Any potential reporting requirements under state or local laws may continue to apply though, as neither CERCLA nor EPCRA would preempt such requirements.

The following sections of this memorandum discuss the purposes of CERCLA and EPCRA in current law, the types of hazardous substances and extremely hazardous substances that may be released from animal waste at farms, the George W. Bush Administration 2008 rule, the D.C. Circuit April 2017 decision that vacated this rule, the Trump Administration's guidance issued in response to the reversal of the rule, and how the amendments to CERCLA proposed in S. 2421 may affect reporting requirements. I hope that this information is helpful to the Committee. I remain available if the Committee needs further assistance from CRS in consideration of S. 2421 and related issues.

CERCLA

Enacted in 1980, CERCLA authorized the Superfund program administered by EPA to remediate environmental contamination from releases of hazardous substances at sites elevated for priority federal attention in coordination with the states, and established the financial liability of "potentially responsible parties" (PRPs) associated with a release.² Congress has amended CERCLA in multiple laws over time to clarify the applicability of the statute to federal facilities, and to modify various response, liability, and enforcement provisions to address issues that arose during the course of implementation.³ Although risks posed by abandoned hazardous waste sites were a central topic in the debate of legislation that led to the enactment of CERCLA, the final bill that Congress enacted included language more broadly addressing past or present releases of hazardous substances across environmental media and industrial, commercial, and governmental sectors.⁴

¹ For a summary of this guidance, see EPA, Office of Land and Emergency Management, *CERCLA and EPCRA Reporting Requirements for Air Releases of Hazardous Substances from Animal Waste at Farms*, 520-F-18-001, February 2018, available at: <https://www.epa.gov/epcra/fact-sheet-cercla-and-epcra-reporting-requirements-air-releases-hazardous-substances-animal>.

² 42 U.S.C. §§9601-9675.

³ For a broader discussion of the scope and purposes of CERCLA than presented in this memorandum, see CRS Report R41039, *Comprehensive Environmental Response, Compensation, and Liability Act: A Summary of Superfund Cleanup Authorities and Related Provisions of the Act*, by David M. Bearden.

⁴ See U.S. Congress, Senate Committee on Environment and Public Works, *A Legislative History of the Comprehensive Environmental Response, Compensation, and Liability Act of 1980 (Superfund)*, Public Law 96-510, committee print, prepared by Congressional Research Service, 97th Cong., 2nd sess., 1983, S. Serial No. 97-14 (Washington: GPO, 1983).

Applicability to Releases

CERCLA generally applies to the release, or the substantial threat of a release, of a hazardous substance into the environment within the United States or under the jurisdiction of the United States. The geophysical scope of the environment covered under CERCLA encompasses multiple media. The term “environment” is defined in Section 101(8) to include surface water, groundwater, a drinking water supply, surface soils, sub-surface soils, or ambient air.⁵ As defined in Section 101(22), the term “release” also is relatively broad in terms of the manner in which a hazardous substance may enter the environment, including spilling, leaking, pumping, pouring, emitting, emptying, discharging, injecting, escaping, leaching, dumping, or disposing into the environment.⁶

Section 101(14) of CERCLA references specific categories of chemicals designated under other laws as hazardous substances subject to CERCLA.⁷ Section 102 authorizes EPA to designate additional hazardous substances that may present substantial danger to public health or welfare, or the environment, if a release were to occur.⁸ Section 102 also authorizes EPA to establish a quantitative threshold for each hazardous substance to determine when a release must be reported to the federal government.⁹ Section 103 requires the person responsible for a release to notify the National Response Center, if the release is equal to or exceeds the reportable quantity during a 24-hour period.¹⁰ Section 103(f) authorizes an exception to offer compliance flexibility for a continuous release that is “stable in quantity and rate,” in which case notice may be provided to the National Response Center on an annual basis as an alternative to daily notification.¹¹ However, Section 103(f) requires intervening updates during the year to report a “statistically significant increase” in the quantity of a release above that previously reported or occurring.

Reporting requirements under CERCLA provide a mechanism through which the federal government may become aware of a release to determine whether a response action may be warranted to fulfill the objective of the statute to protect human health and the environment.¹² Whether a response action is warranted generally would depend on the potential risks of exposure at the site where the release occurs. Reportable quantities merely serve as thresholds to determine the quantity of a release that is subject to notification, but do not necessarily indicate a particular level of risk. As for any chemical, the potential risks of a release would depend on the concentration, duration, and frequency of exposure (i.e., the dose), the conditions of exposure, and individual characteristics of the exposed individual.¹³

Once a release is reported, Section 103(a) requires the National Response Center to notify EPA and other appropriate federal agencies, and the state in which the release occurs.¹⁴ If warranted, Section 104 authorizes federal actions to respond to the release in coordination with the state, including enforcement of liability.¹⁵ The federal response authorities of CERCLA are Presidential authorities delegated to EPA

⁵ 42 U.S.C. §9601(8).

⁶ 42 U.S.C. §9601(22).

⁷ 42 U.S.C. §9601(14).

⁸ 42 U.S.C. §9602.

⁹ Designated hazardous substances and reportable quantities are codified in federal regulation at 40 C.F.R. Part 302.

¹⁰ 42 U.S.C. §9603. The U.S. Coast Guard administers the National Response Center.

¹¹ 42 U.S.C. §9603(f). Procedures for filing continuous release reports are codified in federal regulation at 40 C.F.R. §302.8.

¹² Releases reported under CERCLA also generate data that some may desire to evaluate sources of pollution for regulatory planning or other purposes, although this utility would be incidental to the statutory objective of CERCLA.

¹³ For information on risk assessment, see National Academy of Sciences, National Research Council, *Science and Decisions: Advancing Risk Assessment*, 2009, available at: <http://www.nap.edu/catalog/12209/science-and-decisions-advancing-risk-assessment>. This report updates the previous National Research Council risk assessment guidelines issued in 1983.

¹⁴ 42 U.S.C. §9603(a).

¹⁵ 42 U.S.C. §9604.

and other federal agencies on the National Response Team.¹⁶ The procedures for taking response actions under CERCLA are outlined in the National Oil and Hazardous Substances Pollution Contingency Plan.¹⁷

Section 107 of CERCLA establishes the categories of PRPs who may be held liable for response costs, natural resource damages, and the costs of federal studies of potential health hazards that may be associated with a release.¹⁸ Federal response actions are subject to annual appropriations but may be recovered from the liable parties. PRPs generally may include current and past site owners and operators, persons who arranged for the treatment, disposal, or transport of a hazardous substance, and transporters who selected a site for disposal.

Section 104 also authorizes federal actions to respond to releases of other pollutants or contaminants that are not designated as hazardous substances, if the release would present an imminent and substantial danger to public health or welfare. However, CERCLA does not establish liability for such releases, nor does the statute require the reporting of such releases.

Statutory Exemptions

Although CERCLA is relatively broad in its applicability to releases of hazardous substances, Congress has excluded certain types of substances or releases from the statutory definitions in Section 101 that it did not intend to be subject to the statute. Section 107(b) of CERCLA also provides defenses to liability for certain conditions beyond a party's control such as an act of God, act of war, or an act or omission of a third party.¹⁹ In the 1980 enactment and subsequent amendments, Congress also has exempted specific categories of parties, circumstances, or uses that it did not intend to be subject to liability or reporting requirements, but for which federal authority remains available to respond to a release if warranted to protect human health and the environment.

Some of these exclusions or exemptions are based on practical considerations, whereas others are intended to avoid duplication or overlap with other laws that apply to the same releases. Among the exclusions or exemptions more directly relevant to the agricultural sector, Congress excluded the "normal application of fertilizer" from the definition of the term "release" in Section 101(22) of CERCLA, making such use not subject to the statute in its entirety. Congress also excluded hazardous substances that may be released as a result of the proper application of a pesticide from liability under the statute in Section 107(i),²⁰ and reporting requirements in Section 103(e).²¹ The availability of the pesticide exemption is dependent upon proper application of the pesticide in accordance with federal registration requirements of the Federal Insecticide, Fungicide, and Rodenticide Act (FIFRA).²² Congress included both the fertilizer exclusion and the pesticide exemption in the 1980 enactment. Congress has not since amended CERCLA to exempt the agricultural sector more broadly.

EPCRA

Once CERCLA required the reporting of releases of hazardous substances to the federal government, questions arose as to whether federal law also should require reporting of the same information directly to

¹⁶ Executive Order 12580, *Superfund Implementation*, January 23, 1987.

¹⁷ 40 C.F.R. Part 300.

¹⁸ 42 U.S.C. §9607.

¹⁹ 42 U.S.C. §9607(b).

²⁰ 42 U.S.C. §9607(i).

²¹ 42 U.S.C. §9603(e).

²² 7 U.S.C. §§136-136y. Demonstration of the proper application of a federally registered pesticide generally would be subject to documentation of its use.

state and local governments to help facilitate their emergency response capabilities.²³ This question was among the prominent topics in the debate of the 1986 amendments to CERCLA. Although some state and local laws at that time addressed releases of hazardous substances, response authorities and capabilities varied among jurisdictions. Congress developed uniform federal requirements for the reporting of releases to state and local governments in EPCRA under Title III of the Superfund Amendments and Reauthorization Act of 1986 (P.L. 99-499). Title III enacted EPCRA as a separate law, and not as an amendment CERCLA.²⁴

EPCRA addresses emergency notification of releases at the state and local level to complement the reporting of releases to the federal government under CERCLA. Similar in objective to CERCLA, release notification under EPCRA provides a mechanism for state and local governments to determine whether a response action may be warranted under their own respective authorities, or in coordination with a federal response. Reporting under EPCRA also provides an earlier opportunity for state and local governments to become aware of a release instead of relying upon subsequent notification from the National Response Center once a release is reported to the federal government. However, EPCRA does not authorize federal, actions to respond to a release, nor does the statute establish liability for releases. Federal response authorities and liability for releases are rooted in CERCLA.

EPCRA also requires notification at the state and local level for emergency planning purposes if a facility stores extremely hazardous substances or other hazardous chemicals in excess of certain amounts.²⁵ These notification requirements are intended to enhance state and local emergency preparedness in the event of an actual release. Other provisions of EPCRA also require the reporting of toxic chemicals used at a facility in excess of certain amounts to EPA for public disclosure in the federal Toxic Release Inventory (TRI).²⁶ These emergency planning and TRI disclosure requirements apply to the presence or use of chemicals at a facility, in addition to actual releases into the environment.

Section 324 of EPCRA generally requires information on chemicals reported for emergency planning purposes, disclosure on the TRI, and followup emergency notices of actual releases to be made available to the general public.²⁷ CERCLA does not include similar public disclosure requirements. However, followup emergency notices subject to EPCRA generally would include information on releases of hazardous substances that are subject to CERCLA. Section 322 of EPCRA authorizes the withholding of certain sensitive or confidential information from disclosure to the general public under Section 324.²⁸ As a matter of practice, the National Response Center also maintains a publicly available database that tracks the nature and general location of releases of hazardous substances reported under CERCLA, but not private or confidential information.²⁹ The following discussion of EPCRA focuses on emergency notification of releases into the environment potentially relevant to air releases, and statutory exemptions from notification in current law.³⁰

²³ See U.S. Congress, Senate Committee on Environment and Public Works, *A Legislative History of the Superfund Amendments and Reauthorization Act of 1986 (Public Law 99-499)*, committee print, prepared by Congressional Research Service, 101st Cong., 2nd sess., 1990, S. Prt. 101-120 (Washington: GPO, 1990).

²⁴ 42 U.S.C. §§11001-11050.

²⁵ For emergency planning, reportable quantities of extremely hazardous substances are codified in federal regulation at 40 C.F.R. Part 355, Appendix A, and of hazardous chemicals are codified in federal regulation at 40 C.F.R. Part 370.

²⁶ Threshold quantities subject to reporting for the TRI are codified in federal regulation at 40 C.F.R. Part 372.

²⁷ 42 U.S.C. §11044.

²⁸ 42 U.S.C. §11042.

²⁹ Information publicly disclosed from the database is available in reports that track releases by calendar year, available on the National Response Center's website at: <http://nrc.uscg.mil>.

³⁰ For a broader discussion of EPCRA than presented in this memorandum, see CRS Report RL32683, *The Emergency Planning and Community Right-to-Know Act (EPCRA): A Summary*, by David M. Bearden.

Emergency Release Notification

Section 301 of EPCRA established the framework for the formation of State Emergency Response Commissions (SERCs) appointed by the governor of each state, and Local Emergency Planning Committees (LEPCs) within each state appointed by the respective SERC.³¹ Section 302 authorizes EPA to establish quantitative thresholds for the reporting of releases of extremely hazardous substances into the environment.³² Most of these substances also are listed as hazardous substances under CERCLA, but some of these substances are not designated under CERCLA.³³ Section 304 of EPCRA applies to emergency notification of releases into the environment.³⁴ This provision outlines three situations in which the reporting of releases of extremely hazardous substances or hazardous substances is required. In each situation, the person responsible for the release must notify the SERC and the appropriate LEPC that covers the local jurisdiction where the release occurs.

Two of these situations are contingent upon the release being subject to reporting to the National Response Center under Section 103 of CERCLA. Section 304(a)(1) of EPCRA requires the notification of a release of an extremely hazardous substance to the SERC and the appropriate LEPC, if the release also would require notification as a hazardous substance under Section 103 CERCLA.³⁵ If a substance is not designated as an extremely hazardous substance, Section 304(a)(3) requires the reporting of a release to the SERC and the appropriate LEPC if the release still would require notification as a hazardous substance under Section 103 of CERCLA.³⁶

Section 304(a)(2) of EPCRA covers a third situation in which a substance is separately listed as an extremely hazardous substance, but is not subject to reporting under Section 103 of CERCLA. Section 304(a)(2) requires the reporting of a release of a separately listed extremely hazardous substance in such instances, if the release:

- is not a federally permitted release as defined in Section 101(10) of CERCLA,³⁷
- is in an amount in excess of a reportable quantity that EPA designated under Section 302, and
- “occurs in a manner” which would require notification under Section 103 of CERCLA.³⁸

With respect to the third criterion, the phrase “occurs in a manner” generally has been implemented over time to mean the nature of the release in terms of how the substance enters the environment. Section 329 of EPCRA defines the term “release” and “environment” similar in scope to CERCLA.³⁹ The regulations that EPA promulgated to implement Section 304 reflect these statutory definitions.⁴⁰

³¹ 42 U.S.C. §11001.

³² 42 U.S.C. §11002.

³³ Reportable quantities of extremely hazardous substances subject to emergency release notification under EPCRA are codified in federal regulation at 40 C.F.R. Part 355, Appendix A.

³⁴ 42 U.S.C. §11004.

³⁵ 42 U.S.C. §11004(a)(1).

³⁶ 42 U.S.C. §11004(a)(3).

³⁷ 42 U.S.C. §9601(10).

³⁸ 42 U.S.C. §11004(a)(2).

³⁹ 42 U.S.C. §11049. The definition of the term “release” in EPCRA is nearly identical to that in CERCLA. The definition of the term “environment” in EPCRA is similar to CERCLA, but is more generally worded in its description to encompass “water, air, and land and the interrelationship which exists among and between water, air, and land and all living things.”

⁴⁰ 40 C.F.R. §355.61.

Statutory Exemptions

In any of these scenarios involving extremely hazardous substances or hazardous substances, Section 304(a)(4) exempts a release of either substance from reporting under EPCRA, if the release would result in exposure to persons solely within the site or sites on which a facility is located.⁴¹ Other factors also may determine whether a release is subject to reporting under EPCRA. In each instance of applicability, Section 304 refers to the reporting of a release at facilities where a hazardous chemical is produced, used, or stored. Conversely, if a hazardous chemical is not produced, used, or stored, at a facility, the reporting requirements do not apply.

Section 311(e) generally defines the term “hazardous chemical” to mean any such chemical regulated under the Occupational Safety and Health Act that is subject to federal requirements for hazard communication in the workplace.⁴² However, Congress excluded certain uses from this definition in EPCRA, thereby exempting these uses from reporting requirements of the statute. Among those more directly relevant to the agricultural sector, uses of “any substance to the extent it is used in routine agricultural operations or is a fertilizer held for sale by a retailer to the ultimate customer” are excluded from EPCRA. The statute does not further describe or define the scope of these uses though. Section 329(5) cross-references the definition in Section 311(e) for application of this exclusion across the requirements of the statute. Congress did not include a similarly broad exclusion from CERCLA for releases of hazardous substances used in routine agricultural operations.

Animal Waste

“Animal waste” per se is not designated in CERCLA as a hazardous substance or in EPCRA as an extremely hazardous substance. Numerous studies have examined the chemical constituency of animal waste, and associated chemical by-products that may be generated from decomposition of the organic matter. For example, a 2003 study by the National Research Council found that air emissions from animal waste commonly include ammonia, hydrogen sulfide, methane, volatile organic compounds, and particulate matter that may consist of various chemicals.⁴³ Of these chemicals, ammonia and hydrogen sulfide are designated as hazardous substances in regulation under CERCLA⁴⁴ and as extremely hazardous substances in regulation under EPCRA.⁴⁵ The threshold for the reportable quantity of a release of ammonia or hydrogen sulfide into the environment under either CERCLA or EPCRA is 100 pounds during a 24-hour period into any media (e.g., air, water, or soils).

If such quantity were released into the ambient air, the concentrations generally would decline with increasing distance from the point of release as a result of dispersion.⁴⁶ The National Research Council 2003 study noted that potential risks from air releases would depend on exposure that may vary by site and among individuals. The Council found “little scientific evidence” that exposures beyond the boundaries of animal feeding operations have significant effects on human health because the

⁴¹ 42 U.S.C. §11004(a)(4).

⁴² 42 U.S.C. §11021(e). This provision of EPCRA references the Occupational Safety and Health Administration’s definition of a hazardous chemical codified in federal regulation at 29 C.F.R. §1910.1200(c) that means “any chemical which is classified as a physical hazard or a health hazard, a simple asphyxiant, combustible dust, pyrophoric gas, or hazard not otherwise classified.”

⁴³ National Academies, National Research Council, *Air Emissions from Animal Feeding Operations: Current Knowledge, Future Needs*, 2003, 263 pp. available at: <https://www.nap.edu/catalog/10586/air-emissions-from-animal-feeding-operations-current-knowledge-future-needs>.

⁴⁴ 40 C.F.R. §302.4.

⁴⁵ 40 C.F.R. Part 355, Appendix A.

⁴⁶ The rate of dispersion of a chemical released into ambient air would depend on multiple factors (e.g., properties of the chemical, wind, temperature, humidity, and interaction with other chemicals present in the atmosphere).

concentrations “usually” are below threshold levels that would present a health risk.⁴⁷ The Council observed that risks of inhalation may be more significant within the boundaries of an animal feeding operation and within enclosed animal housing where concentrations are higher. The Council identified technical challenges in capturing and measuring air releases from animal waste for regulatory purposes, but recommended additional research and the development of best management practices to mitigate air releases. Additional studies have examined these issues since that time.⁴⁸

EPA 2008 Rule

As a matter of implementation, EPA historically has not applied CERCLA and EPCRA to air releases of hazardous substances from animal waste at farms, with the exception of large concentrated animal feeding operations (CAFOs) subject to EPCRA under a 2008 rule. On December 18, 2008, EPA finalized a rule during the George W. Bush Administration to establish an administrative exemption from reporting requirements of CERCLA for air releases of hazardous substances from animal waste at all farms, and to apply EPCRA only to large CAFOs of certain sizes.⁴⁹ The rule specified thresholds for the maximum number of livestock by type that an operation could stable or confine to qualify for the exemption from reporting under EPCRA. The rule exempted air releases from animal waste of livestock that are not stabled or confined. Operations that stable or confine livestock in numbers equal to or greater than the following thresholds were considered sufficiently large to make them subject to emergency notification requirements for air releases in excess of reportable quantities under EPCRA:

- 700 mature dairy cows, whether milked or dry;
- 1,000 veal calves;
- 1,000 cattle other than mature dairy cows or veal calves (cattle includes but is not limited to heifers, steers, bulls and cow/calf pairs);
- 2,500 swine each weighing 55 pounds or more;
- 10,000 swine each weighing less than 55 pounds;
- 500 horses;
- 10,000 sheep or lambs;
- 55,000 turkeys;
- 30,000 laying hens or broilers, if the farm uses a liquid manure handling system;
- 125,000 chickens (other than laying hens), if the farm uses other than liquid manure handling system;
- 82,000 laying hens, if the farm uses other than a liquid manure handling system;
- 30,000 ducks (if the farm uses other than a liquid manure handling system); or
- 5,000 ducks (if the farm uses a liquid manure handling system).⁵⁰

⁴⁷ National Academies, National Research Council, *Air Emissions from Animal Feeding Operations: Current Knowledge, Future Needs*, 2003, p. 66.

⁴⁸ For example, see National Association of Local Boards of Health, *Understanding Concentrated Animal Feeding Operations and Their Impact on Communities*, 2010, prepared under a cooperative agreement with the Centers for Disease Control and Prevention, available at: https://www.cdc.gov/nceh/ehs/docs/understanding_cafos_nalboh.pdf. This study includes a bibliography of numerous other studies as well.

⁴⁹ U.S. Environmental Protection Agency, “CERCLA/EPCRA Administrative Reporting Exemption for Air Releases of Hazardous Substances from Animal Waste at Farms,” 73 *Federal Register* 76948-76960, December 18, 2008.

⁵⁰ 40 C.F.R. §355.31(g).

In the preamble to the final rule, EPA noted a petition submitted in August 2005 by the National Chicken Council, National Turkey Federation, and U.S. Poultry and Egg Association requesting an administrative exemption from CERCLA and EPCRA reporting requirements specifically for ammonia emissions from poultry operations. However, EPA indicated that the final rule was not a direct response to that petition.⁵¹ EPA stated that the exemption from reporting was warranted in its view because a response action would be “impractical” or “unlikely” in most instances, and that the exemption was consistent with the agency’s goal of reducing the “burden” of reporting releases for which response actions most often are not expected.⁵² EPA explained that its decision to apply EPCRA to large CAFOs was based on a response to public comments on the 2007 proposed rule by some who expressed a desire for this information because of the potentially greater magnitude of air releases.⁵³ The proposed rule would have exempted CAFOs of any size from reporting requirements.⁵⁴

The 2008 rule did not exempt air releases from animal waste at farms from liability under Section 107 of CERCLA or otherwise restrict EPA’s authority under Section 104 to take federal response actions if warranted to protect human health and the environment. The 2008 rule also did not exempt air releases of hazardous substances from other potential sources at farms, or releases of hazardous substances from animal waste into other environmental media (e.g., soil, groundwater, or surface water), if such releases were to exceed thresholds for reporting.

However, releases from animal waste into surface waters in compliance with a Clean Water Act discharge permit would be treated as a “federally permitted release” under Section 101(10) of CERCLA.⁵⁵ Section 103(a) exempts federally permitted releases from reporting under the statute,⁵⁶ and Section 107(j) exempts federally permitted releases from liability under the statute.⁵⁷ Federally permitted releases exempt under CERCLA also are exempt from reporting under EPCRA. Exemptions for federally permitted releases are based on the presumption that regulation under another federal law would address potential risks. In current law, there is no similar permitting of air releases of hazardous substances from animal waste upon which to base a federally permitted release exemption.

Litigation Challenging the EPA 2008 Rule

The Waterkeeper Alliance and other organizations filed a petition for review in court to challenge EPA’s authority to issue the 2008 rule, arguing against EPA’s conclusion that the reporting of hazardous substance releases from animal waste at farms under CERCLA and EPCRA is “unnecessary.”⁵⁸ On April 11, 2017, the U.S. Court of Appeals for the District of Columbia Circuit (D.C. Circuit) granted the petition and vacated the exemptions from reporting in the 2008 rule.⁵⁹ The court held that Congress did not authorize EPA to exempt releases of hazardous substances from the statutory reporting requirements under CERCLA and EPCRA.⁶⁰ The court concluded that the information gained from this reporting

⁵¹ U.S. Environmental Protection Agency, “CERCLA/EPCRA Administrative Reporting Exemption for Air Releases of Hazardous Substances from Animal Waste at Farms,” 73 *Federal Register* 76951, December 18, 2008.

⁵² *Ibid.*, 73 *Federal Register* 76949.

⁵³ *Ibid.*, 73 *Federal Register* 76950.

⁵⁴ U.S. Environmental Protection Agency, “CERCLA/EPCRA Administrative Reporting Exemption for Air Releases of Hazardous Substances from Animal Waste,” 72 *Federal Register* 73700-73708, December 28, 2007.

⁵⁵ 42 U.S.C. §9601(10).

⁵⁶ 42 U.S.C. §9603(a).

⁵⁷ 42 U.S.C. §9607(j).

⁵⁸ Petition for Review, *Waterkeeper Alliance v. Env’tl. Prot. Agency*, 853 F.3d 527 (D.C. Cir. Jan. 15, 2009) (No. 09-1017).

⁵⁹ *Waterkeeper Alliance v. Env’tl. Prot. Agency*, 853 F.3d 527, 537-38 (D.C. Cir. 2017).

⁶⁰ *Id.* at 534-36.

would not have “trivial or no value,” but that the information could potentially provide “some real benefits” to the public and local emergency responders.⁶¹ The court subsequently approved multiple EPA motions to stay (i.e., delay) the issuance of an order to lift the exemptions in the 2008 rule to allow more time to develop procedures for reporting and collecting release data, considering the potentially large number of farms that had not reported previously under the 2008 rule. The court granted the most recent stay on February 1, 2018, extending it until May 1, 2018.⁶²

Trump Administration Guidance

During the Trump Administration, EPA has issued guidance to instruct farms that they should comply with the reporting of air releases under Section 103 of CERCLA through filing annual continuous release reports with the National Response Center once the court order becomes effective after the expiration of the stay.⁶³ EPA has issued guidelines for farms to estimate the quantity of continuous releases using various existing methodologies, and has announced that the agency is developing additional methodologies to better inform emission estimates. This guidance for continuous release reporting and emission estimates applies to reporting under Section 103 of CERCLA.

EPA also has issued separate guidance outlining the Trump Administration’s interpretation that farms using substances in “routine agricultural operations” are excluded from emergency notification of releases under Section 304 of EPCRA.⁶⁴ Based on this interpretation, EPA has announced that farms are not required to report air releases from animal waste to state and local officials, and that the agency intends to conduct a rulemaking on its interpretation of this exemption. The George W. Bush Administration did not render an interpretation of the “routine agricultural operations” exemption in its 2008 rule and instead determined that Section 304 of EPCRA did apply to large CAFOs. The April 2017 D.C. Circuit decision made no reference to this particular exemption in EPCRA.

S. 2421

As introduced, S. 2421 would amend Section 103(e) of CERCLA to exempt “air emissions from animal waste (including decomposing animal waste) at a farm” from reporting to the National Response Center regardless of the quantity of the release of hazardous substances in air emissions. The bill would define the term “animal waste”:

- to mean “feces, urine, or other excrement, digestive emission, urea, or similar substances emitted by animals (including any form of livestock, poultry, or fish),” and
- to include “animal waste that is mixed or commingled with bedding, compost, feed, soil, or any other material typically found with such waste.”

S. 2421 would define the term “farm” to mean a site or area (including associated structures) that:

⁶¹ *Id.* at 535-38.

⁶² Per Curiam Order, *Waterkeeper Alliance v. Env’tl. Prot. Agency*, 853 F.3d 527 (D.C. Cir. Feb. 1, 2018) (No. 09-1017).

⁶³ During the Trump Administration, EPA has issued guidance for farms to report air releases from animal waste once the court order becomes effective. See “CERCLA and EPCRA Reporting Requirements for Air Releases of Hazardous Substances from Animal Waste at Farms” available at: <https://www.epa.gov/epcra/cercla-and-epcra-reporting-requirements-air-releases-hazardous-substances-animal-waste-farms> (as viewed on March 7, 2018).

⁶⁴ EPA, Office of Land and Emergency Management, *Does EPA Interpret EPCRA Section 304 to require farms to report releases from animal waste?*, October 25, 2017, available at: <https://www.epa.gov/epcra/question-and-answer-epcra-reporting-requirements-air-releases-hazardous-substances-animal>.

- is used “for the production of a crop;” or “the raising or selling of animals (including any form of livestock, poultry, or fish);” and
- “under normal conditions, produces during a farm year any agricultural products with a total value equal to not less than \$1,000.”

S. 2421 would not exempt such air emissions from federal response authority under Section 104 if action were warranted to protect human health and the environment, or potential liability under Section 107.

In current law, Section 103(e) of CERCLA exempts the proper application of a federally registered pesticide from reporting. S. 2421 would strike Section 103(e) in its entirety, *reinsert* this existing exemption, and add an exemption for air emissions from animal waste at farms as defined in the bill. S. 2421 would not alter the treatment of pesticides under CERCLA in current law.

S. 2421 would not amend EPCRA. However, exempting releases of hazardous substances in air emissions from animal waste at farms from reporting under Section 103 of CERCLA would have the effect of exempting such releases from reporting to state and local officials under Section 304(a)(1) and Section 304(a)(3) of EPCRA. Reporting is required under both of these provisions contingent upon reporting of hazardous substances required under Section 103 of CERCLA. Exempting a release from reporting under Section 103 of CERCLA thereby would exempt the same release from reporting under these two provisions in Section 304 of EPCRA.

Whether releases of extremely hazardous substances in air emissions from animal waste would remain subject to other provisions of EPCRA would depend on two factors. First, Section 304(a)(2) applies to releases of separately listed extremely hazardous substances that are not subject to reporting as hazardous substances under Section 103 of CERCLA. For example, ammonia and hydrogen sulfide are listed separately as extremely hazardous substances under EPCRA, not only as hazardous substances under CERCLA. An exemption from CERCLA therefore may not necessarily apply to separately listed extremely hazardous substances covered under Section 304(a)(2) of EPCRA. Second, if substances released from animal waste may be considered substances used in routine agricultural operations, such releases may be exempt from reporting under EPCRA altogether, as the Trump Administration has interpreted.

If enacted into law, S. 2421 would amend CERCLA to provide an exemption from the reporting of air releases of hazardous substances emitted by animal waste at farms. In turn, this amendment would have the effect of exempting the same releases of hazardous substances from reporting under EPCRA that is contingent upon reporting required under CERCLA. However, the potential applicability of EPCRA to air releases of separately listed extremely hazardous substances may depend on whether the Trump Administration’s interpretation of the exemption for substances used in routine agricultural operations is challenged. Any potential reporting requirements under state or local laws may continue to apply though, as neither CERCLA nor EPCRA would preempt such requirements.

MEMORANDUM

March 13, 2018

To: Senate Committee on Environment and Public Works
Attention: Kusai Merchant

Honorable Cory A. Booker, Ranking Member
Subcommittee on Superfund, Waste Management, and Regulatory Oversight
Attention: Adam Zipkin

From: David M. Bearden, Specialist in Environmental Policy, dbearden@crs.loc.gov, 7-2390

Subject: Supplemental Analysis: Fair Agricultural Reporting Method Act/FARM Act (S. 2421)

This memorandum responds to your request for a more detailed discussion of the analysis presented in a CRS memorandum provided on March 7, 2018. CRS prepared this earlier memorandum to respond to your initial request for an analysis of amendments to the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) in the Fair Agricultural Reporting Method Act or “FARM Act” (S. 2421), as introduced on February 13, 2018. As discussed in the March 7th CRS memorandum, S. 2421 would exempt air releases of hazardous substances emitted by animal waste at farms from reporting requirements under CERCLA, and would have a bearing on the applicability of reporting requirements under Section 304 of the Emergency Planning and Community Right-to-Know Act (EPCRA).

This supplemental memorandum elaborates upon the analysis presented in the March 7th CRS memorandum to outline circumstances in which the emergency notification requirements in Section 304 of EPCRA would apply under current law, and the bearing of S. 2421 on the applicability of these requirements to air releases emitted by animal waste. The March 7th CRS memorandum provides additional background information in support of this analysis, and offers a broader examination of how S. 2421 would define the terms “animal waste” and “farm” for purposes of the bill. I hope that this supplemental memorandum is helpful to address your questions about circumstances in which EPCRA may continue to apply if S. 2421 were enacted. If you need further assistance from CRS in consideration of this legislation or related issues, please do not hesitate to contact me.

Section 304 of EPCRA

As explained in the March 7th CRS memorandum, Section 304 of EPCRA outlines three situations in which the reporting of releases of extremely hazardous substances or hazardous substances into the environment is required.¹ In each situation, the person responsible for the release must notify the State Emergency Response Commission (SERC) and the appropriate Local Emergency Planning Committee

¹ 42 U.S.C. §11004.

(LEPC) that covers the local jurisdiction where the release occurs. Two of these situations are contingent upon the release being subject to notification under Section 103 of CERCLA for reporting to the National Response Center.² The third situation is not contingent upon reporting under CERCLA. The three situations covered in Section 304 of EPCRA are as follows.

- Section 304(a)(1) requires notification of releases of extremely hazardous substances listed under EPCRA, if the release would require notification for hazardous substances under Section 103 of CERCLA.³
- Section 304(a)(3) requires notification of releases of other hazardous substances that are not separately listed as extremely hazardous substances under EPCRA, if the release would require notification under Section 103 of CERCLA.⁴
- Section 304(a)(2) requires notification of releases of extremely hazardous substances listed under EPCRA (but that are not subject to notification under CERCLA), if three criteria are met.⁵

In this third situation, releases of extremely hazardous substances listed under EPCRA would require notification under Section 304(a)(2), if the release:

- (A) is not a federally permitted release as defined in Section 101(10) of CERCLA;⁶
- (B) is in an amount in excess of a reportable quantity that the U.S. Environmental Protection Agency (EPA) designated under Section 302 of EPCRA;⁷ and
- (C) “occurs in a manner” that would require notification under Section 103 of CERCLA.

S. 2421

S. 2421 would amend Section 103(e) of CERCLA to exempt “air emissions from animal waste (including decomposing animal waste) at a farm” from reporting to the National Response Center regardless of the quantity of the release of hazardous substances in air emissions. The bill would not amend Section 304 or any other provisions of EPCRA. Although S. 2421 would not amend this statute, the bill would have the effect of eliminating reporting requirements under Section 304(a)(1) and Section 304(a)(3) of EPCRA for air releases of hazardous substances emitted by animal waste at farms, in so far as the terms “animal waste” and “farm” are defined in the bill.

Both Section 304(a)(1) and Section 304(a)(3) of EPCRA are contingent upon reporting required under Section 103 of CERCLA. Exempting a release from reporting under Section 103 of CERCLA thereby would have the effect of exempting the same release from reporting under Section 304(a)(1) and Section 304(a)(3) of EPCRA. The April 2017 court decision referenced in the March 7th CRS memorandum (*Waterkeeper Alliance, et al., v. EPA*) described this statutory relationship in terms of “a release that triggers the CERCLA duty also automatically trips the EPCRA reporting requirements in subsections (1) and (3)” of Section 304.⁸

² 42 U.S.C. §9603.

³ 42 U.S.C. §11004(a)(1).

⁴ 42 U.S.C. §11004(a)(3).

⁵ 42 U.S.C. §11004(a)(2).

⁶ 42 U.S.C. §9601(10).

⁷ 42 U.S.C. §11002.

⁸ *Waterkeeper Alliance v. Env'tl. Prot. Agency*, 853 F.3d 527, 537-38 (D.C. Cir. 2017).

S. 2421 would not have a bearing on the reporting of releases of extremely hazardous substances under Section 304(a)(2) of EPCRA though, as this provision is not contingent upon reporting required under Section 103 of CERCLA. If the exemption from CERCLA in S. 2421 were enacted, the applicability of Section 304(a)(2) therefore would remain the same as in current law. An air release of an extremely hazardous substance emitted by animal waste at a farm would be subject to Section 304(a)(2) if all three statutory criteria for reporting were met.

An air release of an extremely hazardous substance emitted by animal waste would satisfy the first criterion in Section 304(a)(2)(A) if it were not a federally permitted release. Section 101(10) of CERCLA defines the term “federally permitted release” to mean releases regulated under other specific laws. Section 101(10)(H) authorizes a federally permitted release for “any emission into the air” subject to a permit, regulation, or State Implementation Plan, pursuant to the Clean Air Act.⁹ CRS is not aware of the use of these authorities to regulate air releases emitted by animal waste upon which a federally permitted release presently could be based. If such air releases were permitted under the Clean Air Act, the releases would be exempt from reporting and liability under CERCLA as a federally permitted release, and thereby exempt from reporting to state and local officials under Section 304 of EPCRA.

An air release of an extremely hazardous substance emitted by animal waste would satisfy the second criterion in Section 304(a)(2)(B) if the quantity of the release were to exceed the quantitative threshold for reporting that EPA designated in federal regulation pursuant to Section 302 of EPCRA.¹⁰ For example, EPA separately listed ammonia and hydrogen sulfide (substances commonly emitted by animal waste) as extremely hazardous substances, and designated 100 pounds released during a 24-hour period as the threshold for reporting under Section 302 of EPCRA. Air releases of ammonia or hydrogen sulfide emitted by animal waste in excess of 100 pounds during a 24-hour period therefore would satisfy this second criterion in Section 304(a)(2)(B).

An air release of an extremely hazardous substance emitted by animal waste (e.g., ammonia or hydrogen sulfide) would satisfy the third criterion of Section 304(a)(2)(C) of EPCRA, if the release were to occur in the same *manner* as a “release” that would require reporting under CERCLA. As outlined in the March 7th CRS memorandum, the term “release” in CERCLA is relatively broad with respect to the manner in which a hazardous substance may enter the environment, including spilling, leaking, pumping, pouring, emitting, emptying, discharging, injecting, escaping, leaching, dumping, or disposing into the environment.¹¹ The term “environment” is defined in Section 101(8) of CERCLA to include surface water, groundwater, a drinking water supply, surface soils, sub-surface soils, or ambient air.¹² Section 329 of EPCRA defines the terms “release” and “environment” similar in scope to CERCLA.¹³ The federal regulations promulgated under Section 304 of EPCRA reflect these statutory definitions.¹⁴ Both CERCLA and EPCRA generally treat emissions into the ambient air as releases into the environment.

In implementation, EPA has treated the phrase “occurs in a manner” in EPCRA Section 304(a)(2)(C) to mean the nature of the release in terms of how a substance enters the environment, not that reporting *is* required under Section 103 of CERCLA. Otherwise, Section 304(a)(2) would be rendered meaningless in

⁹ 42 U.S.C. §9601(10)(H).

¹⁰ Reportable quantities for extremely hazardous substances subject to emergency release notification under Section 304 of EPCRA are codified in federal regulation at 40 C.F.R. Part 355, Appendix A.

¹¹ 42 U.S.C. §9601(22).

¹² 42 U.S.C. §9601(8).

¹³ 42 U.S.C. §11049. The definition of the term “release” in EPCRA is nearly identical to that in CERCLA. The definition of the term “environment” in EPCRA is similar to CERCLA, but is more generally worded in its description to encompass “water, air, and land and the interrelationship which exists among and between water, air, and land and all living things.”

¹⁴ 40 C.F.R. §355.61.

covering releases of extremely hazardous substances that do not require reporting as hazardous substances under CERCLA, while requiring reporting under CERCLA at the same time.

The March 7th CRS memorandum observed that the exemption from reporting under Section 103 of CERCLA in S. 2421 may not necessarily exempt releases of separately listed extremely hazardous substances from reporting under Section 304(a)(2) of EPCRA. The applicability of this provision to a particular release would depend on whether all three statutory criteria outlined above are met. Regardless of these criteria though, Section 304 in its entirety may not apply to air releases from animal waste at farms if the Trump Administration's interpretation of the exemption for substances used in routine agricultural operations is not challenged.¹⁵ S. 2421 would not have a bearing on this exemption.

Also as noted in the March 7th CRS memorandum, potential reporting requirements under state or local laws may continue to apply regardless of an exemption in federal law, as neither CERCLA nor EPCRA would preempt such state or local requirements.

¹⁵ The March 7th CRS memorandum provides further discussion of the Trump Administration's interpretation of the exemption in Section 311(e) of EPCRA for substances used in routine agricultural operations. This interpretation is outlined in the following agency guidance: EPA, Office of Land and Emergency Management, *Does EPA Interpret EPCRA Section 304 to require farms to report releases from animal waste?*, October 25, 2017, available at: <https://www.epa.gov/epcra/question-and-answer-epcra-reporting-requirements-air-releases-hazardous-substances-animal>.

ARGUED DECEMBER 12, 2016
DECIDED APRIL 11, 2017

IN THE UNITED STATES COURT OF APPEALS
FOR THE DISTRICT OF COLUMBIA CIRCUIT

<p>WATERKEEPER ALLIANCE, ET AL.,</p> <p style="text-align: center;">Petitioners,</p> <p style="text-align: center;">v.</p> <p>U.S. ENVIRONMENTAL PROTECTION AGENCY,</p> <p style="text-align: center;">Respondent.</p>	<p>)</p> <p>)</p> <p>)</p> <p>)</p> <p>)</p> <p>)</p> <p>)</p> <p>)</p> <p>)</p> <p>)</p> <p>)</p>	<p>Nos. 09-1017 & 09-1104 (Consolidated)</p>
--	--	--

**NATIONAL PORK PRODUCERS COUNCIL’S AND U.S. POULTRY
& EGG ASSOCIATION’S BRIEF IN SUPPORT OF EPA’S MOTION
TO STAY ISSUANCE OF MANDATE**

Respondent-Intervenors National Pork Producers Council (“NPPC”) and U.S. Poultry & Egg Association (“USPOULTRY”)¹ respectfully submit this brief in support of EPA’s motion to stay the issuance of the mandate (Doc. No. 1684518).

¹ NPPC and USPOULTRY are both respondent-intervenors in Case No. 09-1017. NPPC is the petitioner in Case No. 09-1104, and USPOULTRY is a petitioner-intervenor in that case.

INTRODUCTION

By the time the mandate issues (at which point reports will be due “immediately”),² farmers at tens of thousands of small and medium sized farms will have had to determine whether the animal waste at their farms may emit hazardous substances like ammonia in amounts exceeding EPA’s CERCLA and EPCRA reporting thresholds. Unless EPA is given time to develop guidance on how to comply with the statutory reporting provisions, there will be no uniformity in how farms estimate their emissions.

Absent the requested stay, the holding in this case will result in a repeat performance of a reporting fiasco. As described below, in January 2009, when the recently-vacated rules went into effect, larger farms flooded state and local emergency planning authorities with emissions estimates that the agencies did not know what to do with. This time, when the mandate issues (or within a few days thereafter), tens of thousands of farmers who own smaller farms will repeat this futile exercise.

Unless EPA is given time to provide guidance, these farmers—primarily family farmers—will have to grapple with a federal reporting requirement without help from the government. These small farmers would largely be on their own—

² Comprehensive Environmental Response, Compensation, and Liability Act (“CERCLA”) 42 U.S.C. § 9603(a); Emergency Planning and Community Right-to-Know Act (“EPCRA”), 42 U.S.C. § 11004(a).

they do not have technical or legal assistance of the type needed to interpret EPA's reporting regulations. A pre-guidance reporting deadline would be an unfriendly introduction to CERCLA and EPCRA. A six-month stay would allow EPA to provide the guidance necessary for the nation's small and medium farms—by far the majority of farms in this country—to comply with a regulatory scheme that at present is foreign to them.

LEGAL STANDARD

Under D.C. Circuit Rule 41(a)(2), this Court may stay issuance of the mandate for “good cause.” Although typically only lasting up to 90 days, this Court has previously granted stays with a longer term where regulatory compliance was at issue. *See Indep. U.S. Tanker Owners Comm. v. Dole*, 809 F.2d 847, 854–55 (D.C. Cir. 1987) (granting six-month stay of mandate).

ARGUMENT

I. Prior to Issuance of the Mandate, Tens of Thousands of Small and Medium-Sized Farms Must Estimate Their Emissions to Determine Whether They Need to Report.

Under the recently vacated 2008 reporting rule, the nation's largest farms were required to comply with the EPCRA emergency reporting provision, and they have done their best to provide rough estimates to the local authorities using

various methods.³ Paul J. Bredwell III, USPOULTRY's Vice President of Environmental Programs, explains that on January 20, 2009, the day that the EPCRA reporting rules went into effect for large CAFOs, the reporting situation "could be easily characterized as chaotic." Declaration of Paul J. Bredwell III (attached as Ex. 4) ¶ 15. Mr. Bredwell received a call from the office of the Maryland State Emergency Planning Commission "asking [him] what the reports were and what were they supposed to do with them." *Id.* ¶ 16. The caller "was puzzled as to why the reports were being submitted and acknowledged it was wasting their time." *Id.*

Likewise, Michael Formica, NPPC's Assistant Vice President & Legal Counsel, Domestic Affairs, recounts how state and local emergency response coordinators were "overwhelmed" by the volume of reports, to the point where they reportedly "rejected the hundreds of reports that followed" after fax machines ran out of paper, took "phone[s] off the hook," and *actually began telling pork producers* "that there was no reporting requirement and *that the rule was simply an*

³ See, e.g., Declaration of John Pagel (attached as Ex. 1) ¶¶ 2, 10; Declaration of Jim Winn (attached as Ex. 2) ¶¶ 2, 10. Farms covered by Air Consent Agreements have also reported to the National Response Center and to local authorities, but their emissions estimates are unavoidably imprecise and of limited utility. See, e.g., Declaration of Douglas Wolf (attached as Ex. 3) ¶¶ 21–22. These and other declarations, which are attached as exhibits to this brief, were originally filed in the U.S. District Court for the District of Wisconsin in the related case, *Nat'l Pork Producers Council v. Jackson*, No. 09-cv-73.

internet hoax.” Declaration of Michael C. Formica (attached as Ex. 9) ¶¶ 7-9 (emphasis added). Even EPA appears to have been confused in the early days of the 2008 reporting rule: EPA Region 4 reportedly informed state officials that “they did not need to accept the reports and instead to direct any farmers to [contact] EPA’s Office of Water. *Id.* ¶ 9.

If the 2009 reporting trigger produced a situation that was “chaotic,” the upcoming days immediately following issuance of the mandate are sure to be worse. Now small and medium farms—defined by the number of the particular type of animal they produce⁴—will be required to determine whether they must file CERCLA and EPCRA reports. They represent the majority of farms in the United States. For example, there are more than 40,000 poultry farms in the United States, and about 90% of chicken broiler farms are small or medium entities not previously subject to the reporting requirement. Bredwell Decl. ¶ 10.⁵ The number of poultry farms alone required to report could cause the National Response Center to receive more reports in a few days than it typically receives in a year. *See* Formica Decl. ¶¶ 12–13 (noting 33,665 reports received in 1994, and 24,193 received in 2016).

⁴ *See* Regulatory Definitions of Large CAFOs, Medium CAFO[s], and Small CAFOs, https://www.epa.gov/sites/production/files/2015-08/documents/sector_table.pdf (last visited July 26, 2017).

⁵ The cutoff for large chicken (broiler) farms that use dry manure handling systems is 125,000 birds per growing cycle.

Most of the farmers managing these operations will find the new mandatory Federal reporting requirements to be “highly intimidating,” and they will be “extremely fearful of possible civil and criminal consequences if they make mistakes in what they report, or how they report it.” Declaration of Thomas R. Hebert (attached as Ex. 6) ¶ 6.⁶ They also are concerned about citizen suits, which “have the ability to put the livelihood of poultry and egg producers at risk.” Bredwell Decl. ¶ 8. Consequently they may choose to submit release reports for emissions that turn out to be below the legal reporting threshold.” *Id.*

Compounding these fears is the “complexity and scope of the written reporting requirements such as those set forth in EPA’s regulations.” Hebert Decl. ¶ 8. For instance, farmers are likely to be confused by the requirement to submit information on the identity and location of “sensitive” populations and ecosystems within a one-mile radius of their farms, and the frequency of the release of substances from animal waste, the fraction of the release from each release source, and the specific period over which it occurs. *See id.* And farmers are currently struggling with interpreting unfamiliar terms in EPA’s regulations. *See id.*; *see*

⁶ *See also* EPA Mot. (Doc. No. 1684518) at 6–7; Declaration of Laurie Fischer (attached as Ex. 7) ¶ 8 (“I have been informed by [Dairy Business Association of Wisconsin] members that the chemical substances, including manure, on their farms are used only for ordinary farming purposes but that they have made emergency reports under EPCRA for fear that they may be subject to large fines or criminal penalties if they do not make these reports.”).

also Formica Decl. ¶ 4 (“Just this week I have had conversations with leading pork producing companies—sophisticated operations—that are struggling with the details of what they are required to report, the process they need to use to calculate their estimated emissions, and the accuracy of the various techniques as applied to particular farms.”).

The confusion and fear that farmers are already experiencing is understandable: the “vast majority” of farmers have limited or no experience with mandatory environmental reporting under state or Federal law, and are without staff or outside counsel to advise and assist in the preparation of such reports. Hebert Decl. ¶ 6; *see also* Formica Decl. ¶ 5 (explaining how, in rural areas where many pork farmers reside, “there is a lack of legal assistance” and the “legal professionals that do provide services in [those] areas tend to be generalists, focusing on contracts, estate planning, and real estate, not specialists in federal environmental law.”). Many small farms, not being part of a large communications network, may also not learn of the new requirements for some time. Bredwell Decl. ¶¶ 12–13.

Nevertheless, farmers will take these requirements seriously, and will seek direction as to how to properly and correctly estimate their reported emissions. Hebert Decl. ¶ 6. But in the absence of such direction or guidance by EPA, small and medium sized farms will be placed in the untenable position of making

inaccurate and unreliable estimates based on “research or monitoring data from farms that do not have the same operating setup as their own systems, are not located in the same geographical locations, or do not have the same climates and operating conditions.” Hebert Decl. ¶ 7.

That many farmers reached out to EPA after this Court’s April 11, 2017 decision is a testament to the significance of this issue to them and the anxiety they face. EPA Mot. at 5–6. That significance was also demonstrated in 2009 by the voluminous number of calls made to NPPC from farmers concerned about compliance.⁷ In sum, an immediate reporting requirement will necessitate immediate compliance, and without guidance from EPA these farmers will be rightfully anxious about how to proceed.

II. Without a Reliable Estimation Method, Pre-Guidance Reporting Will Be Difficult.

A. EPA has yet to identify an authoritative method of estimation.

As this Court has recognized, regulators and scientists have thus far not been able to coalesce around one widely recognized and accepted method for estimating emissions. EPA Mot. at 5. Extant methods are unreliable, returning widely

⁷ Wolf Decl. ¶ 26 (“[NPPC’s] phone lines were overrun with calls from nervous producers who had no idea how to comply, as well as producers who attempted to comply only to be with bewilderment or misinformation from the state and local officials receiving the calls.” NPPC staff even received phone calls from state and local emergency planning authorities who were confused about the reports and who had been unable to get guidance from EPA.”).

varying results not only on a technique-by-technique basis, but also a study-by-study basis. As Mr. Bredwell explains, “[c]urrent research does not allow a poultry producer to estimate when they exceed the reporting threshold much less know what the upper bound of emission may be, which is also required when reporting.” Bredwell Decl. ¶ 7; *see also* Hebert Decl. ¶ 5 (“There are no nationally recognized or widely accepted air emissions estimation methodologies that livestock and poultry farmers or regulatory authorities could use to calculate or estimate ammonia (or other) air emissions from the manure produced by animals raised at livestock and poultry farms.”).

EPA’s Science Advisory Board (“SAB”) has recognized this problem. The SAB examined the emissions-estimating methodologies EPA had developed after EPA reviewed data from responses to a 2011 call for information and the National Air Emissions Monitoring Study. The SAB found that the data were valid for the farms actually assessed, but not sufficient to estimate emissions nationwide. Letter from Dr. David T. Allen, Chair, Science Advisory Board, to Hon. Bob Perciasepe, Acting Administrator, U.S. EPA, April 19, 2013, *available at* [https://yosemite.epa.gov/sab/SABPRODUCT.NSF/81e39f4c09954fcb85256ead006be86e/08A7FD5F8BD5D2FE85257B52004234FE/\\$File/EPA-SAB-13-003-unsigned+.pdf](https://yosemite.epa.gov/sab/SABPRODUCT.NSF/81e39f4c09954fcb85256ead006be86e/08A7FD5F8BD5D2FE85257B52004234FE/$File/EPA-SAB-13-003-unsigned+.pdf) (last visited July 21, 2017). Numerous factors complicate emissions estimation, including the number of species from which emissions are to be

estimated, varying geographical and seasonal climatic conditions, and differing manure management techniques. Bredwell Decl. ¶ 6. As Mr. Bredwell explains, “researchers discovered that establishing a one-size-fits-all emissions estimation methodology was virtually impossible.” *Id.*

Real-world application reflects the present uncertainty in the scientific community. For example, Chad Bierman, a Wisconsin farmer who owns a pork farm (and has a master’s degree in animal science and genetics), used one emissions estimator from the University of Nebraska to estimate the amount of ammonia emissions that might come from his farm. That tool estimated anywhere from 165 to 335 pounds per day of ammonia emissions. *See, e.g.,* Declaration of Chad Bierman (attached as Ex. 8) ¶¶ 13–14 (noting that while “[u]niversities and others have developed preliminary [estimation] techniques, . . . these estimates vary substantially,” and describing the results of application of one of these models to his farm). Farmers should not have to determine whether they must report based on a tool that provides one estimate that is over 100% greater than another. Doing so would only add to the anxiety immediate compliance requirements would cause.

B. EPA has not provided guidance on the definitions of key terms underlying the reporting requirements.

Under these circumstances, farmers do not understand how to demonstrate compliance. Without a uniform way to estimate emissions or clarity as to what must be measured, farmers will have no certainty that they are reporting what is

required in the manner required. Not only are farmers without adequate tools to estimate their emissions, but they also lack guidance as to the scope of the activity covered by the rules and the meaning of key terms in EPA's reporting regulations. *See* Hebert Decl. ¶¶ 7–8.

For example, certain categories of farms may qualify for reduced reporting if their releases are “continuous and stable.” 40 C.F.R. § 302.8. But how are farmers to know whether their emissions qualify as “without interruption or abatement or that is routine, anticipated, and intermittent and incidental to normal operations”? *Id.* § 302.8(b). Or “predictable and regular in amount and rate of emission,” particularly given the variables inherent in emissions estimation identified above? *Id.* Without guidance as to who qualifies, no farmer will assume that she qualifies, and therefore farmers may provide reports that are wholly unnecessary. And once a report is made, follow-up requirements are triggered, *e.g.*, *id.* § 355.40(b), which will be time consuming and no more helpful, especially in the absence of a way to accurately estimate emissions. Moreover, CERCLA exempts the “normal application of fertilizer” from the definition of “release,” 42 U.S.C. § 9601(22)(D). EPCRA exempts “[a]ny substance to the extent it is used in routine agricultural operations” from the definition of “hazardous chemical,” 42 U.S.C. § 11021(e)(5). Due to the complex yet undefined nature of not only the requirements but also the

exemptions, farmers do not even know what emissions they are supposed to estimate and report.

As noted above, farmers have already expressed the concern that they do not know how to comply. We are not aware of any changes between April 11 and the date of this filing that would meaningfully aid farmers in complying with the new requirements. Since EPA is already working on guidance, it should be allowed to continue. EPA Mot. at 6.

III. Absent EPA Guidance, Erroneous Reporting Could Be Costly for Farmers While Providing Limited Benefits to Regulators or the Public.

A. Severe consequences can flow from erroneous reporting.

EPA has already identified the potential consequences farmers face from submitting defective reports, even if the defects are not the fault of the farmers. *See* EPA Mot. at 6–8. Citizen suits are also a possibility, and would have the additional threat of liability for attorneys’ fees, which small farms in particular would be wholly unequipped to pay. *See* Bredwell Decl. ¶ 8. At the same time, it is these small farmers who will disproportionately bear the brunt of the reporting requirements, and therefore the associated costs and potential liability.

B. The potential consequences are out of proportion to any benefits from the reports.

Not only are the estimates sure to be unreliable, but the authorities receiving the reports will not know what to do with them. In Wisconsin, for example, when

farmers began providing reports to state and local authorities, these authorities were confused as to why the reports were being made, and they did not know how they were supposed to use the information. Some agency staff even went so far as to ask the farmers for information regarding the EPCRA reporting requirements. Fischer Decl. ¶ 7; Winn Decl. ¶¶ 10–13; Pagel Decl. ¶¶ 10–13.

The President of the National Association of SARA Title III [*i.e.*, EPCRA] Program Officials has expressed in a letter to Administrator Pruitt that the reports received thus far “are of no particular value” and “are generally ignored because they do not relate to any particular event.” Declaration of Timothy R. Gablehouse (attached as Ex. 5), Ex. A at 1. Instead, Mr. Gablehouse suggests that “open dialog and coordination can be more effective,” and that “[o]nly the LEPC and local first responders can determine what information they need from a farm as part of their emergency planning process.” *Id.* at 1–2; *see also, e.g.*, 73 Fed. Reg. 76,948, 76,954/2 (Dec. 18, 2008) (noting that many local responders believe the reporting “is of little value”). Mr. Gablehouse’s views demonstrate the need for guidance from EPA before farms begin to report.

Without EPA guidance, these reports will also have limited benefits to the public. Only accurate information can actually “help local communities protect

public health, safety, and the environment from chemical hazards,”⁸ the purpose of EPCRA. If local emergency response coordinators find the reports they have received so far to be useless, the information is unlikely to be useful to anyone else. Indeed, erroneous reporting will be more likely to have a detrimental effect, unnecessarily causing concern to the public. When promulgating the exceptions, for example, EPA noted that studies submitted “indicating the potential health issues associated with the emissions from animal waste at farms” had to do with *on-farm* issues, whereas the reporting is targeted at *off-site* emissions. 73 Fed. Reg. at 76,955/2. Immediate reporting of inaccurate information would do a disservice to communities that receive it.

CONCLUSION

Because issuance of the mandate before EPA can provide guidance will trigger confusion among farmers and agencies without benefiting the public, this Court should grant EPA’s request to stay the mandate for six months so it can avert a reporting fiasco.

⁸ U.S. EPA, Summary of the Emergency Planning & Community Right-to-Know Act, *available at* <https://www.epa.gov/laws-regulations/summary-emergency-planning-community-right-know-act> (last visited July 24, 2017).

DATED: July 27, 2017

Respectfully submitted,

/s/ David Y. Chung

Richard E. Schwartz

David Y. Chung

Elizabeth B. Dawson

CROWELL & MORING LLP

1001 Pennsylvania, Avenue, N.W.

Washington, DC 20004

Telephone: (202) 624-2500

Counsel for National Pork Producers

Council and U.S. Poultry & Egg Association

CERTIFICATE OF COMPLIANCE

This brief complies with the type-volume limitations of Federal Rule of Appellate Procedure 27(d)(2)(A) because it contains 3,091 words, calculated using the Word Count feature of Microsoft Word 2010. This brief complies with the typeface and type-style requirements of Rule 27(d)(1)(E) because it has been prepared in a proportionally spaced typeface using Microsoft Word 2010 in Times New Roman and 14 point font.

/s/ David Y. Chung

David Y. Chung

CERTIFICATE OF SERVICE

I hereby certify that on July 27, 2017, I caused copies of the foregoing brief to be served by the Court's CM/ECF system, which will send a notice of the filing to all registered CM/ECF users.

/s/ David Y. Chung

David Y. Chung

ARGUED DECEMBER 12, 2016
DECIDED APRIL 11, 2017

IN THE UNITED STATES COURT OF APPEALS
 FOR THE DISTRICT OF COLUMBIA CIRCUIT

_____)	
WATERKEEPER ALLIANCE, ET AL.,)	
)	
Petitioners,)	
)	Nos. 09-1017 &
v.)	09-1104 (Consolidated)
)	
U.S. ENVIRONMENTAL)	
PROTECTION AGENCY,)	
)	
Respondent.)	
_____)	

NATIONAL PORK PRODUCERS COUNCIL’S AND U.S. POULTRY
& EGG ASSOCIATION’S BRIEF IN SUPPORT OF EPA’S MOTION
TO STAY ISSUANCE OF MANDATE

EXHIBIT 1

DECLARATION OF JOHN PAGEL

IN THE UNITED STATES DISTRICT COURT
FOR THE WESTERN DISTRICT OF WISCONSIN

NATIONAL PORK PRODUCERS COUNCIL
122 C Street, N.W.
Suite 875
Washington, D.C. 20001,

and

WISCONSIN PORK ASSOCIATION
9185 Old Potosi Road
Lancaster, WI 53813,

Case No. 3:09-cv-00073-slc

Plaintiffs,

and

DAIRY BUSINESS ASSOCIATION, INC.
4039 Ponce De Leon Boulevard
Oneida, WI 54155,

Intervening Plaintiff,

v.

LISA P. JACKSON
Administrator
United States Environmental Protection Agency
1200 Pennsylvania Avenue, N.W.
Washington, D.C. 20460,

Defendant.

DECLARATION OF JOHN PAGEL IN SUPPORT OF
PLAINTIFFS' MOTION FOR SUMMARY JUDGMENT

I, John Pagel, declare as follows:

1. I operate the Pagel's Ponderosa dairy farm located in Kewaunee County, Wisconsin and I am a member of the Dairy Business Association, Inc. I make this declaration

based upon my personal knowledge and in support of the Motion for Summary Judgment of the National Pork Producers Council, Wisconsin Pork Association and Dairy Business Association, Inc. I understand that the information that I am providing in this declaration will be used to determine whether my farm and similar farms qualify for a statutory exemption to emergency reporting requirements under the federal Emergency Planning and Community Right-to-Know Act ("EPCRA"). I have authorized the Dairy Business Association, Inc to represent my interests for this purpose.

2. My farm in Kewaunee County houses more than 700 mature dairy cows. These animals are stabled or otherwise confined in pens, barns or similar structures. As a large CAFO in Wisconsin, I operate pursuant to Wisconsin Pollution Discharge Elimination System WPDES Permit # 0059374.

3. I use a variety of substances on my farm. Those substances include pesticides, commercial fertilizer, substances used for cleaning facilities and equipment, and manure (animal excrement) produced by animals on my farm. I am aware of no chemicals at my farm other than those used in my ordinary farm operations.

4. Manure generated and stored on my farm is an excellent source of plant nutrients. Manure contains many of the elements required for plant growth (including nitrogen, phosphorus and potassium). Manure is also a soil enhancer that provides positive benefits to soil quality. The manure produced by and utilized by my farm is a valuable resource. I apply manure to fields throughout the cropping season in accordance with a comprehensive nutrient management plan which requires nutrients be utilized as fertilizer for plants.

5. I am told that ammonia, hydrogen sulfide and other substances are emitted from manure.

6. My farm uses a manure management system that involves the collection, storage, and land application of manure. My system includes a flume system and an anaerobic digester that first heats the manure to a temperature of 100° F, and then the methanogenic bacteria converts some of the energy of manure into a biogas which consists primarily of methane (CH₄, the same as natural gas) and CO₂. The digested manure is then pumped to a manure solids separator. The mechanical manure separator separates the digested manure into solid and liquid factions. The remaining solids are either utilized for animal bedding or applied to fields as fertilizer in accordance with my farm's nutrient management plan. The liquid manure, with most of the solids removed, is then transferred into storage pits. Periodically, the storage pits are emptied and the liquid manure is applied to fields in accordance with my farm's nutrient management plan.

7. I own or lease all of the cropland upon which I spread manure to fertilize crops.

8. I typically spread manure twice a year. I spread in the spring prior to planting corn crops. I also apply manure in the fall after crop harvest.

9. I cannot conclusively or reliably determine the amount of ammonia, hydrogen sulfide or other substances being emitted from the manure on my farm. Universities and others have developed preliminary techniques for estimating these rates. However, these estimates vary substantially from technique to technique and also from study to study.

10. I have reported an emissions estimate to the Kewaunee County Emergency Planning Committee and Wisconsin Emergency Management.

11. When I contacted the Kewaunee County Emergency Planning Committee to provide my initial telephone notification, the person I spoke with had no idea why I had called to report routine air emissions from my farm and expressed confusion as to what she was supposed

to do with the information I had provided. I explained to the employee that the U.S. Environmental Protection Agency directed me to report my emissions to local emergency management officials.

12. When I contacted Wisconsin Emergency Management to provide my initial telephone notification, agency personnel were unavailable so I left a voicemail reporting my emission estimates. The next day I called to confirm receipt of my voicemail emission report, but no knowledgeable personnel were available. A person from the Wisconsin Emergency Management support staff agreed to take my name, telephone number and address, but she did not seem to understand the purpose of my call.

13. I submitted a follow-up written notification to both the local and State agencies within 30 days of my initial telephone notification. Upon receipt of my written notification, the Kewaunee County Emergency Planning Committee commented that they did not have any resources available for farms seeking to report emissions. A Kewaunee County staff person then requested that I send an extra copy of the forms I was submitting in the event that other farms requested information about how to report their emissions pursuant to the new EPCRA rule.

I declare under penalty of perjury under the laws of the United States of America that the foregoing is true and correct.

Executed this 20th day of March, 2009.

s / John Pagel
John Pagel

CERTIFICATE OF SERVICE

I hereby certify that on July 27, 2017, I caused copies of the foregoing Declaration of John Pagel to be served by the Court's CM/ECF system, which will send a notice of the filing to all registered CM/ECF users.

/s/ David Y. Chung

David Y. Chung

IN THE UNITED STATES DISTRICT COURT
FOR THE WESTERN DISTRICT OF WISCONSIN

NATIONAL PORK PRODUCERS COUNCIL
122 C Street, N.W.
Suite 875
Washington, D.C. 20001,

and

WISCONSIN PORK ASSOCIATION
9185 Old Potosi Road
Lancaster, WI 53813,

Case No. 3:09-cv-00073-slc

Plaintiffs,

and

DAIRY BUSINESS ASSOCIATION, INC.
4039 Ponce De Leon Boulevard
Oneida, WI 54155,

Intervening Plaintiff,

v.

LISA P. JACKSON
Administrator
United States Environmental Protection Agency
1200 Pennsylvania Avenue, N.W.
Washington, D.C. 20460,

Defendant.

DECLARATION OF JIM WINN IN SUPPORT OF
PLAINTIFFS' MOTION FOR SUMMARY JUDGMENT

I, Jim Winn, declare as follows:

1. I operate the Cottonwood Dairy farm located in Lafayette County, Wisconsin and I am a member of the Dairy Business Association, Inc. This declaration is made on the basis of

my own personal knowledge and is offered in support of the Motion for Summary Judgment of the National Pork Producers Council, Wisconsin Pork Association and Dairy Business Association, Inc. I understand that the information that I am providing in this declaration will be used to determine whether my farm and similar farms qualify for a statutory exemption to emergency reporting requirements under the federal Emergency Planning and Community Right-to-Know Act ("EPCRA"). I have authorized the Dairy Business Association, Inc to represent my interests for this purpose.

2. My farm in Lafayette County houses more than 700 mature dairy cows. These animals are stabled or otherwise confined in pens, barns or similar structures. As a large CAFO in Wisconsin, I operate pursuant to Wisconsin Pollution Discharge Elimination System WPDES Permit # 0059021.

3. I use a variety of substances on my farm. Those substances include pesticides, commercial fertilizer, substances used for cleaning facilities and equipment, and manure (animal excrement) produced by cows on my farm. I use all of these substances for farm purposes. I am aware of no chemicals at my farm other than those used in my ordinary farm operations.

4. The manure generated and stored on my farm is as an excellent source of nutrients for crops. Manure contains many of the elements required for plant growth – including nitrogen, phosphorus, and potassium. Manure is also a soil enhancer that provides positive benefits to soil quality. The manure produced by and utilized by my farm is a valuable resource. I typically apply manure to fields throughout the cropping season in accordance with a comprehensive nutrient management plan which requires that nutrients be utilized as fertilizer for plants.

5. It is my understanding that ammonia, hydrogen sulfide and other substances are released to the air from manure.

6. My farm utilizes a manure management system that involves the collection, storage, and land application of manure. Manure and other substances, such as feed and water, are collected and transferred into storage pits. Periodically, the storage pits are emptied and the solid and liquid manure is applied to fields in accordance with my farm's nutrient management plan.

7. I typically spread manure twice a year. I spread in the spring prior to planting corn crops. I also apply in the fall after harvest.

8. I own or lease some of the agricultural fields upon which I spread manure, and some of the manure is used by neighboring farmers to fertilize their crops.

9. I cannot conclusively or reliably determine the amount of ammonia, hydrogen sulfide or other substances being emitted from the manure on my farm. Universities and others have developed preliminary techniques for estimating these rates. However, these estimates vary substantially from technique to technique.

10. I have reported an emissions estimate to the Lafayette County Emergency Planning Committee and Wisconsin Emergency Management.

11. When I contacted the Lafayette County Emergency Planning Committee to provide my initial telephone notification, agency personnel were unavailable so I left a voicemail reporting my emissions estimate. The next day I received a call back from Lafayette County Emergency Planning employee, John Reichling. Mr. Reichling had no idea why I had called to report air emissions from my farm and expressed confusion as to what he was supposed to do with the information I had provided. I explained to the employee that the U.S. Environmental Protection Agency directed me to report my emissions to local emergency management officials.

12. When I contacted Wisconsin Emergency Management to provide my initial telephone notification, the staff person similarly had no idea what I was talking about, why I was calling or what the agency was supposed to do with the information I had provided. Again, I explained that EPA directed me to report my emissions to local emergency management officials.

13. I submitted a follow-up written notification to both the local and State agencies within 30 days of my initial telephone notification. To date, neither agency has responded to my written notification. I have received no guidance or confirmation that my reporting was in compliance with EPCRA.

I declare under penalty of perjury under the laws of the United States of America that the foregoing is true and correct.

Executed this 20th day of March, 2009.

s / Jim Winn

Jim Winn

CERTIFICATE OF SERVICE

I hereby certify that on July 27, 2017, I caused copies of the foregoing Declaration of Jim Winn to be served by the Court's CM/ECF system, which will send a notice of the filing to all registered CM/ECF users.

/s/ David Y. Chung

David Y. Chung

ARGUED DECEMBER 12, 2016
DECIDED APRIL 11, 2017

IN THE UNITED STATES COURT OF APPEALS
 FOR THE DISTRICT OF COLUMBIA CIRCUIT

_____)	
WATERKEEPER ALLIANCE, ET AL.,)	
)	
Petitioners,)	
)	Nos. 09-1017 &
v.)	09-1104 (Consolidated)
)	
U.S. ENVIRONMENTAL)	
PROTECTION AGENCY,)	
)	
Respondent.)	
_____)	

NATIONAL PORK PRODUCERS COUNCIL’S AND U.S. POULTRY
& EGG ASSOCIATION’S BRIEF IN SUPPORT OF EPA’S MOTION
TO STAY ISSUANCE OF MANDATE

EXHIBIT 3

DECLARATION OF DOUG WOLF

3. I am a member of the Wisconsin Pork Association (“WPA”) and voluntarily contribute “check off” funds as an investor in the National Pork Producers Council (“NPPC”), the national trade association representing the pork industry.

4. WPA is a non-profit trade association representing the interests of pork producers in Wisconsin. WPA’s members include pork producers residing in the Western District of Wisconsin. WPA has its headquarters in this district, in Grant County, Wisconsin. The mission of the WPA is to ensure the future of the Wisconsin Pork Industry and its membership. The WPA is committed to the success of the pork industry and provides the leadership for focusing on the identification and enhancement of opportunities while resolving industry challenges. The leadership maintains timely communications to the membership on actions taken regarding factors impacting the pork industry.

5. The NPPC is a non-profit trade association comprised of 43 state pork producer organizations, including WPA. NPPC represents the interests of the nation’s pork industry. NPPC’s mission is to serve as an advocate for reasonable legislation and regulations, develop revenue and market opportunities, and protect the livelihood of the nation’s 67,000 pork producers. NPPC’s mission includes representing pork producers in administrative and judicial proceedings involving national regulations and other government actions that affect the production of pork in the U.S.

6. I hold leadership positions and serve as a member of the Board of Directors for both organizations. In addition, at NPPC I serve as the organization’s Vice President, as well as Vice Chairman of its Environmental Policy Committee, where I am frequently involved in industry-wide discussions involving the environmental and regulatory performance of the pork industry. I am in frequent communication with our membership and investors regarding the

regulatory challenges facing the industry. In addition, I also served as Chair of the Conservation subcommittee of NPPC's Farm Bill Task Force where I served as the point person for the industry in negotiations with Congress and the United States Department of Agriculture over the development of on farm conservation and environmental protection policies associated with the 2008 Farm Bill.

Background and Agricultural Experience

7. I have always been involved in agriculture. I was born and raised on my farm, and have worked on the farm my entire life, and possess both a BS in Agricultural Economics from the University of Wisconsin, Platteville and an MS in Meat and Animal Production from the University of Wisconsin, Madison.

8. Growing up, my father raised hogs, operated a dairy, and grew row crops. We worked together as a partnership for 22 years before I took over full ownership of the farm.

9. Together with my son Shannon, I own and operate Wolf L+G Farms, L.L.C., a diversified farm located at 5590 Substation Rd, Lancaster, Wisconsin, that includes a farrow to finish hog operation, raising sows and market pigs. We also raise corn, soybeans, and hay, and we have a permanent pasture where we operate a cow-calf operation and also finish raising some cattle.

10. My farm is located on three separate parcels of land, each individually devoted to the raising of animals and growing of crops, plus a pasture where we graze cattle. In total, we own approximately 1250 acres and lease about 500 acres.

11. On Parcel One, I have a barn for finishing the raising of swine, a feedlot for cattle, and I raise row crops. Parcel Two is located across both a road and a pasture on which I graze cattle. Parcel two includes my sow barn and nursery for piglets, some crop fields, and, on the

other side of the crop fields, a separate barn for weaned pigs weighing up to about 55 pounds. Parcel three, located approximately one mile away, is a satellite operation that includes both crop land and space for raising hogs.

12. All the manure from my livestock operations is utilized on the same parcel of land where the livestock operation is located.

The Routine Use of Manure in Agricultural Operations

13. Through my involvement with NPPC and WPA, and through my personal experience in farming, I am familiar with the operations of many pork farms in Wisconsin and around the country. Chemicals on these farms, such as pesticides, fertilizer, cleaning products, and manure (animal excrement) are commonly used in farm operations. In fact, in my experience, farmers typically do not keep chemicals – including manure, if manure is viewed as a “chemical” – on their farms except for use in farm operations.

14. Pork farmers generally consider manure to be a valuable resource. They typically either use it on their farms – or sell or give it to neighboring farmers for use on those farms – primarily as a fertilizer and soil enhancer. Manure contains nutrients – such as nitrogen, potassium, and phosphorus – that are essential for growing crops. In addition, the routine use of manure serves as a soil conditioner, adding organic matter back to the soil, maintaining its richness and productivity, increasing the land’s water retention characteristics, and promoting greater yields than the use of other types of fertilizers.

15. I routinely use a variety of substances in my farm operations. All of the chemical substances at my farm, including manure, are used only for my ordinary farm operations. These substances include pesticides, cleaning agents, and fertilizers including manure.

16. I routinely use the manure produced at my farm as a fertilizer and soil enhancer for the raising of our crops, some of which are used for animal feed. The manure is a valuable resource that, used as a major component of my Comprehensive Nutrient Management Plan (CNMP), reduces the amount of chemical fertilizer that would otherwise be applied to agricultural land and enhances the condition of my soils, ensuring the long term, sustainable productivity of my farm.

17. My farm utilizes a manure management system that involves the collection, storage and land application of manure. Manure falls through slots in the floor of the hog barns and is collected and stored in concrete pits approximately eight to ten feet deep and located directly under the barn. From there, manure is transported and incorporated onto each Parcel's agricultural fields via an umbilical system. The manure is removed from the deep pits and directly pumped through a long hose attached behind my tractor where it is incorporated directly into the land using a chisel plow.

18. In order to maximize the value of my manure and its beneficial characteristics' and maximize the condition of my farms soils, my CNMP incorporates a rotating 4 year term for manure application per parcel. Under the terms of my CNMP, I bank the soils nutrient allocations, in coordination with my crop rotation schedule, from year one by using a combination of manure and the application of a 28% nitrogen commercial liquid fertilizer. This process allows me to practice no till farming for 3 years and achieve a higher level of environmental performance. Within each individual parcel of land I cycle the area from year to year where I spread manure. For each area, the manure is applied in the spring before planting as well as in the fall after harvest.

19. While my individual CNMP is specifically designed for my farm, routine use of the manure as a fertilizer and soil enhancer is typical of the vast majority of livestock operations in Wisconsin and generally throughout the United States, where the manure is treated as a valuable commodity and is the preferred method of fertilization on our farms. In this country, manure from pork and dairy operations is ordinarily applied to fields as a fertilizer and soil enhancer for agricultural crops.

Air Consent Agreement

20. I understand that ammonia and hydrogen sulfide are substances that can be emitted from manure. However, although my farm raises animals that generate manure, I do not know of any way that I can reliably determine the amount of ammonia or other substances being emitted from the manure at my farm. I am aware that universities and scientists have developed preliminary techniques for estimating these rates. However, these estimates vary substantially from technique to technique and also from study to study.

21. Because of the uncertainty concerning the air emissions associated with my farm, I decided to enter into a Consent Agreement with the U.S. Environmental Protection Agency (EPA) in 2006. In total, approximately 2,568 producers, representing 6,267 farms across the country, agreed to participate in the process with EPA regarding our air emissions. This total includes at least 1,856 pork producers.

22. The air consent agreement has provided a mechanism for funding EPA's National Air Emissions Monitoring Study ("NAEMS"), a two year study of livestock emissions being conducted by researchers at Purdue University.

23. NAEMS monitoring is currently underway around the nation. The monitoring phase of NAEMS is currently scheduled to conclude in early 2010. Afterwards, EPA will have eighteen months to evaluate all the monitoring data and then publish emission-estimating methods for use by livestock producers. These emission estimating methods are to be publicly available.

The Pork Industry's Experience with EPCRA Reporting

24. The December 18, 2008 announcement by EPA that pork producers who did not sign an air consent agreement must file reports of the routine emissions from their animal manure under EPCRA has caused significant confusion and concern throughout the industry. While I was not required to make a report because I have signed the air consent agreement, many of my fellow pork producers, both in Wisconsin and around the country, were taken by surprise by EPA's decision. For most, the first time they heard about EPA's new requirements came in mid-January 2009, days before the January 20 "effective date" of the EPA notice. As a senior member of NPPC's leadership and Vice Chair of its Environmental Policy Committee, I heard about many problems producers encountered in attempting to estimate emissions and file reports with their state and local emergency response authorities.

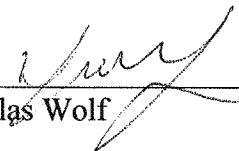
25. Producers ran into three major problems. First, EPA failed to effectively communicate to the agricultural community that the agency had issued a final rule and that EPA was requiring the majority of livestock producers nationwide to report manure air emissions without regard to their routine use of the manure. Second, EPA failed to provide any timely guidance to producers – as promised in EPA's final December 18, 2008 rule (73 Fed. Reg. 76,948, 76,952 (Dec. 18, 2008)) – on how to estimate their emissions or file their reports.

Finally, EPA failed to communicate to state and local emergency response authorities so that they would be prepared to receive these reports.

26. As a result of this failure of communication, the agricultural community across the country was overwhelmed with fear and confusion that continue still to this day. At NPPC, the phone lines were overrun with calls from nervous producers who had no idea how to comply, as well as producers who attempted to comply only to be met with bewilderment or misinformation from the state and local officials receiving the calls. NPPC staff even received phone calls from state and local emergency planning authorities who were confused about the reports and who had been unable to get guidance from EPA.

27. Producers also continue to face difficulty in attempting to estimate their emissions. Without EPA guidance, they were forced to find tools on their own. University extension specialists provided estimating methods, but they have only added to the confusion. In Wisconsin, many producers have tried to estimate emissions using two very different tools that both purport to roughly estimate the amount of emissions that might be associated with the routine manure management practices associated with agricultural operation. One estimator has been distributed by Wisconsin Extension which suggests that a pork producer finishing 2700 pigs will exceed the 100 pound reporting threshold for ammonia attributable to routine manure management activities. A second, more comprehensive estimator distributed by the University of Nebraska suggests that, all else being equal, the reporting threshold for a producer is actually 3333 finishing pigs, 25% higher.

Dated this _____ day of March, 2009.



Douglas Wolf

Subscribed and sworn to before me this

20th day of March, 2009.Alan Meier
Notary PublicMy Commission expires: 3-20-2011

CERTIFICATE OF SERVICE

I hereby certify that on July 27, 2017, I caused copies of the foregoing Declaration of Doug Wolf to be served by the Court's CM/ECF system, which will send a notice of the filing to all registered CM/ECF users.

/s/ David Y. Chung

David Y. Chung

ARGUED DECEMBER 12, 2016
DECIDED APRIL 11, 2017

IN THE UNITED STATES COURT OF APPEALS
 FOR THE DISTRICT OF COLUMBIA CIRCUIT

_____)	
WATERKEEPER ALLIANCE, ET AL.,)	
)	
Petitioners,)	
)	
v.)	Nos. 09-1017 &
)	09-1104 (Consolidated)
)	
U.S. ENVIRONMENTAL)	
PROTECTION AGENCY,)	
)	
Respondent.)	
_____)	

NATIONAL PORK PRODUCERS COUNCIL’S AND U.S. POULTRY
& EGG ASSOCIATION’S BRIEF IN SUPPORT OF EPA’S MOTION
TO STAY ISSUANCE OF MANDATE

EXHIBIT 4

DECLARATION OF PAUL J. BREDWELL III

ARGUED DECEMBER 12, 2016
DECIDED APRIL 11, 2017

Nos. 09-1017(L), 09-1104

**IN THE UNITED STATES COURT OF APPEALS
FOR THE DISTRICT OF COLUMBIA CIRCUIT**

WATERKEEPER ALLIANCE, ET AL.

Petitioners,

v.

U.S. ENVIRONMENTAL PROTECTION AGENCY,

Respondent.

PETITIONS FOR REVIEW OF FINAL ACTION
OF THE ENVIRONMENTAL PROTECTION AGENCY

DECLARATION OF PAUL J. BREDWELL III

I, Paul J. Bredwell III, hereby declare:

1. I am the Vice President of Environmental Programs for the U.S. Poultry & Egg Association (USPOULTRY), the world's largest and most active poultry organization. I have held my position with USPOULTRY for more than 9 years. During that period, I have been engaged in all aspects of poultry and egg production. This includes all aspects of environmental issues associated with raising poultry, including byproducts generated while the birds grow.

2. In 1986, I graduated from the Georgia Institute of Technology with a Bachelor's Degree in Civil Engineering. I currently hold a Professional's Engineering License in the states of Georgia, Tennessee, and South Carolina.

3. Prior to joining USPOULTRY I was employed as a consultant engineer and provided civil and environmental consulting services for multiple poultry companies in the United States over a period of 15 years.

4. USPOULTRY is a non-profit organization that progressively serves its poultry and egg members through research, education, communications and technical services. The association aspires to be the leading technical resource and voice for the industries it serves. Members of USPOULTRY include producers and processors of broilers, turkeys, ducks, eggs, and breeding stock, as well as allied companies. Formed in 1947, the association has affiliated organizations in 26 states and has member companies worldwide.

5. An overriding concern of USPOULTRY with regard to reporting ammonia emissions from animal waste is that the lack of a clear scientific basis for calculating those emissions will unavoidably require the submission of reports whose accuracy is unknown.

6. In 2007, animal agricultural organizations and farms that represented major aspects of animal protein production in the United States entered into a consent agreement. The consent agreement included a provision for the agricultural

groups to fund a study, entitled the “National Air Emissions Monitoring Study” (NAEMS). This study collected air emissions data from representative farms every minute of the day over a two-year period. These data were obtained to develop methodologies to estimate emissions from each animal agriculture sector (*i.e.*, broilers, swine, dairy, etc.). After collecting numerous data points that included ammonia concentration, temperature, humidity, and more, researchers discovered that establishing a one-size-fits-all emissions estimation methodology was virtually impossible. Climatic conditions that vary geographically and seasonally affect the decomposition of manure. Likewise, manure-management techniques like house-cleanout frequency, temperature-humidity set points and ventilation fan operation make every farm unique.

7. The lack of any scientifically validated methodology puts poultry and egg producers in an impossible position. To protect themselves from potential civil and criminal liability, they will be forced to submit uncertain emission reports that no one can verify. Current research does not allow a poultry producer to estimate when they exceed the reporting threshold much less know what the upper bound of emissions may be, which is also required when reporting.

8. The citizen lawsuit provisions within the CERCLA and EPCRA statutes are extremely concerning to our members. These lawsuits have the ability to put the livelihood of poultry and egg producers at risk. This risk alone is

intimidating to poultry producers, who may choose to submit release reports for emissions that turn out to be below the legal reporting threshold.

9. In addition, the large number of producers makes communicating the reporting requirement difficult. Raising commercial poultry continues to be an agricultural operation dominated by the relatively small family farmer, with most production occurring under contract with a producer. The farmer or “grower” normally supplies housing with all the necessary heating, cooling, feeding and watering systems, and the labor to facilitate bird growth. The producer supplies the chicks (or poults), feed, and veterinary medicines.

10. The number of broiler growers is estimated at over 32,000, while there are estimated to be more than 8,000 turkey growers, resulting in a total of more than 40,000 poultry growers in the U.S. According to a survey of poultry contract growers conducted by the National Chicken Council and U.S. Poultry & Egg Association,¹ 92% of growers in the U.S. raise 125,000 birds or less each cycle, which is roughly equivalent to five or six poultry houses on site (depending

¹ The survey provides a snapshot of 16,311 poultry growers around the nation; approximately 500 turkey growers with the balance of responses from broiler growers. Portions of the survey results were published at Starkey, J., CAFO Revisions: Regulation Without Purpose?, WATT PoultryUSA (Jan. 2002).

on the age and the size of the houses).² As demonstrated in the chart below, nearly 60% of broiler growers have less than 75,000 birds, which is equivalent to three to four houses on site:

Distribution by Farm Size (Broilers)

Number of Birds Grown Per Cycle (5-6 cycles per year)	Percentage of Growers in U.S.
1-25K	8.6
25-50k	27.4
50-75k	23.1
75-100k	19.2
100-125k	11.6
125-150k	4.2
150-200k	4.4
200k plus	1.4

11. As stated above, the process of raising poultry for production occurs on thousands of privately owned farms across the country. Multiple agricultural operations take place on these farms to compensate for the thin margins they operate under. In addition to raising poultry, these farms will often raise cattle, grow crops, and grow forage. They are truly small businesses that contract with

² According to the survey by NCC and USPOULTRY, an average broiler grower has approximately 21,000 birds per house, although newer houses can have approximately 25,000 birds per house based on the placing density and the size of the house. The average turkey grower has 3.05 houses with 27,000 birds in each house. Note that most turkey growers likely use one poultry house up to five weeks of age, when the birds are transferred to two “grow out” houses.

poultry companies to grow 1-day old chicks to varying weights according to a specific market.

12. While USPOULTRY offers technical support to poultry and egg producers, these services are extended to them through the USPOULTRY membership the poultry companies hold. As such, USPOULTRY has no contact information for the overwhelming majority of poultry and egg farmers that contract with our members. This fact will make it difficult if not impossible to convey the requirement to report to many poultry producers across the United States.

13. A six-month stay of the reporting mandate will provide EPA and USPOULTRY with the time to develop an outreach campaign that will focus on reaching the largest number of producers possible to make them aware of the upcoming reporting requirement.

14. The following paragraphs demonstrate the difficulty farmers have experienced with the reporting requirements. In August of 2005, the poultry industry filed a petition with the EPA seeking an exemption from EPCRA and CERCLA reporting requirements for the emission of ammonia from poultry houses that operate dry litter systems. Following a three-year rulemaking process the Agency granted all animal feeding operations (AFOs) an exemption from filing CERCLA reports and an exemption for AFOs below the large concentrated animal feeding operation (CAFO) thresholds from filing EPCRA reports.

15. While the poultry industry was disappointed that EPA did not provide the full reporting exemption for ammonia emissions, USPOULTRY attempted to notify as many poultry growers as possible to inform them of the need to submit EPCRA reports if their farm exceeded the CAFO thresholds. USPOULTRY has no way of knowing how many of the approximately 40,000 farms submitted EPCRA reports but the first day of reporting could be easily characterized as chaotic.

16. On January 20, 2009, the day that the EPCRA reporting requirement went into effect, I received a call from the office of Maryland State Emergency Planning Commission asking me what the reports were and what were they supposed to do with them. I informed the caller the reports were being submitted in response to EPA's rule and in accordance the EPCRA reporting requirement. The individual I spoke with was puzzled as to why the reports were being submitted and acknowledged it was wasting their time. To my knowledge, neither the multiple reports filed on January 20, 2009 nor any of the EPRCA reports filed later resulted in an emergency response.

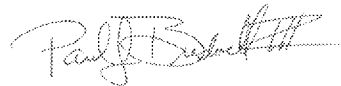
17. The situation was identical when poultry farmers notified Local Emergency Planning Committees (LEPCs), which are typically members of the local fire departments – often volunteer fire departments. In an attempt to understand how the LEPCs viewed receiving EPCRA reports, USPOULTRY reached out to the president of the National Association of SARA Title III Program

Officials (NASTTPO), Tim Gablehouse. Mr. Gablehouse informed USPOULTRY that while their organization is very interested in understanding the hazards their members may face when responding to an emergency on a farm, EPCRA reports that merely notify of releases of non-life-threatening, low concentrations of ammonia, do not provide meaningful information that enhances their ability to plan for emergency responses.

18. Nothing has changed since 2009 that would make a six-month stay of the reporting mandate affect state and local emergency planning capabilities or threaten the life of first responders or the public.

I declare under penalty of perjury that the foregoing is true and correct.

Executed this 26 day of July, 2017, in Fayetteville, Arkansas.



Paul J. Bredwell III, P.E.
Vice President – Environmental Programs
U.S. Poultry & Egg Association

CERTIFICATE OF SERVICE

I hereby certify that on July 27, 2017, I caused copies of the foregoing Declaration of Paul J. Bredwell III to be served by the Court's CM/ECF system, which will send a notice of the filing to all registered CM/ECF users.

/s/ David Y. Chung

David Y. Chung

ARGUED DECEMBER 12, 2016
DECIDED APRIL 11, 2017

Nos. 09-1017(L), 09-1104

**IN THE UNITED STATES COURT OF APPEALS
FOR THE DISTRICT OF COLUMBIA CIRCUIT**

WATERKEEPER ALLIANCE, ET AL.

Petitioners,

v.

U.S. ENVIRONMENTAL PROTECTION AGENCY,

Respondent.

PETITIONS FOR REVIEW OF FINAL ACTION
OF THE ENVIRONMENTAL PROTECTION AGENCY

**DECLARATION OF TIMOTHY R. GABLEHOUSE IN SUPPORT OF
NATIONAL PORK PRODUCERS COUNCIL'S AND U.S. POULTRY
& EGG ASSOCIATION'S PETITION FOR REHEARING**

DECLARATION OF TIMOTHY R. GABLEHOUSE

I, Timothy R. Gablehouse, hereby declare the following:

1. I am the President of the National Association of SARA Title III Program Officials.
2. Attached as Exhibit A to this Declaration is a true and correct copy of a letter that I sent to U.S. Environmental Protection Agency Administrator Scott Pruitt dated June 1, 2017.

I declare under penalty of perjury that the foregoing is true and correct.

Executed this 2nd day of June, 2017, in Denver, Colorado.

/s/ Timothy R. Gablehouse

Timothy R. Gablehouse

EXHIBIT A



National Association of SARA Title III Program Officials

Concerned with the Emergency Planning and Community Right-to-Know Act

June 1, 2017

The Honorable Scott Pruitt
Administrator
U.S. Environmental Protection Agency
1200 Pennsylvania Avenue, NW
Mail Code: 1101A
Washington, DC 20460

Re: CAFOs and Emergency Release Reporting

Dear Administrator Pruitt:

I am writing on behalf of the National Association of SARA Title III Program Officials (NASTTPO), which is made up of members and staff of State Emergency Response Commissions (SERCs), Tribal Emergency Response Commissions (TERCS), Local Emergency Planning Committees (LEPCs), various federal, state and local agencies, private industry and the vast number of volunteers that perform emergency planning and emergency response activities for their communities. Our membership is dedicated to working together with regulated facilities, transportation entities and communities at large to improve community preparedness for emergency events including hazardous materials releases.


NASTTPO over the past several years has had the opportunity to work with various industry groups on emergency preparedness related rulemaking programs at EPA. These experiences have taught us that the most important thing to LEPCs and first responders is not detailed regulatory requirements for a facility's relationship to these groups, but rather the simple act of open dialog and coordination. Following the DC Circuit decision in *Waterkeeper Alliance v EPA*, we have had meaningful and encouraging discussions with the U.S. Poultry and Egg Association along these lines. NASTTPO believes that open dialog and coordination can be more effective than release reporting for farms that do not handle quantities of EPCRA EHS chemicals but are nevertheless expected to report regarding animal manure management.

We have had experience with EPCRA emergency release reports as well as CERCLA continuous release reports from farms primarily regarding ammonia from animal manure management. These reports are of no particular value to LEPCs and first responders and they are generally ignored because they do not relate to any particular event. (This should be contrasted to the few farms that utilize gas chlorine for water treatment where emergency release reports are useful because they are event specific.)

LEPCs and first responders do not need more generic data. They need information that is locally relevant and upon which they can act. This goal is best obtained by a program that promotes coordination between the regulated facilities and these local groups. Recent discussions suggest that such a program involving farms may be achievable.

We are in favor of reducing regulatory burdens if coordination on the information needs of LEPCs and first responders occurs. The information we want from farms is community-specific. Only the LEPC and local first responders can determine what information they need from a farm as part of their emergency planning process. What we really need is coordination between the farm and local responders and LEPCs. We want them to talk to each other.

Thank you.



Timothy R Gablehouse
President
410 17th St, Ste 275
Denver CO 80202
(303) 572-0050

CERTIFICATE OF SERVICE

I hereby certify that on July 27, 2017, I caused copies of the foregoing Declaration of Timothy R. Gablehouse to be served by the Court's CM/ECF system, which will send a notice of the filing to all registered CM/ECF users.

/s/ David Y. Chung

David Y. Chung

ARGUED DECEMBER 12, 2016
DECIDED APRIL 11, 2017

Nos. 09-1017(L), 09-1104

**IN THE UNITED STATES COURT OF APPEALS
FOR THE DISTRICT OF COLUMBIA CIRCUIT**

WATERKEEPER ALLIANCE, ET AL.

Petitioners,

v.

U.S. ENVIRONMENTAL PROTECTION AGENCY,

Respondent.

PETITIONS FOR REVIEW OF FINAL ACTION
OF THE ENVIRONMENTAL PROTECTION AGENCY

DECLARATION OF THOMAS R. HEBERT

I, Thomas R. Hebert, hereby declare:

1. I am the managing director of Bayard Ridge Group LLC in Washington, DC. I am a regulatory, programmatic, and legislative policy consultant who has worked for livestock and poultry farmers for 19 years, advising them on environmental policy matters that directly involve their farming operations. I hold an undergraduate degree in Horticulture and a Master of Science degree in Agriculture Economics, both from Michigan State University.

2. Before entering the private sector as a consultant, I was the Deputy Under Secretary for Natural Resources in the U.S. Department of Agriculture (USDA) from 1993 to 1998. In that role, my primary responsibilities included the development and implementation of policy for the programs of the USDA's Natural Resources Conservation Service. I also led much of USDA's work with other federal agencies and the White House to develop the Administration's 1996 Farm Bill proposals, as well as the implementation of Farm Bill provisions. From 1989 to 1993, I served as a Senior Economist for the U.S. Senate Committee on Agriculture, Nutrition and Forestry. During that time, I played a key role in the development and passage of the conservation title for the 1990 Farm Bill.

3. My areas of policy and regulatory expertise include Clean Water Act regulatory requirements applicable to concentrated animal feeding operations (CAFOs); manure and nutrient management related to water quality; and monitoring of air emissions from manure as it may relate to Federal requirements and policy stemming from the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) and the Emergency Planning and Community Right-to-Know-Act (EPCRA). Livestock and poultry farmers look to me for expert advice and counsel on whether and how Federal environmental regulatory requirements apply to their operations.

4. Through my roughly 19 years of consulting experience and my prior government service, I have become deeply familiar with farmers' livestock and poultry production systems, as well as how they manage those systems. I have developed a thorough understanding of how livestock and poultry farmers are affected by environmental regulatory requirements, including how requirements can vary depending on the size of their farms. I also understand how the farmers' ages and their backgrounds shape and affect how they react to and deal with such requirements.

5. There are no nationally recognized or widely accepted air emissions estimation methodologies that livestock and poultry farmers or regulatory authorities could use to calculate or estimate ammonia (or other) air emissions from the manure produced by animals raised at livestock and poultry farms. I believe that the manure being managed by tens of thousands of livestock and poultry producers may be emitting to the air more than 100 pounds of ammonia per day. Farms that exceed that threshold would be subject to the CERCLA and EPCRA reporting requirements.

6. These tens of thousands of livestock and poultry producers will include all of the large CAFOs in this country, and essentially all of the medium-sized producers, as well as a large proportion of the small livestock and poultry producers. The vast majority of all of these operations will have either limited or

no experience with mandatory environmental reporting under state or Federal law. In my professional judgment, except for approximately 1,000 of these farms, these operations do not have staff to handle such reporting requirements, nor do they have outside legal counsel with experience in such matters. Once they are informed of reporting requirements, farmers will take them with the utmost seriousness. Without question, these farmers will find mandatory, Federal reporting requirements to be highly intimidating. It is not an obligation that they will take lightly and they will be extremely fearful of possible civil and criminal consequences if they make mistakes in what they report, or how they report it. Lacking prior experience or context, they will be looking for precise direction as to how to properly and correctly estimate their reported emissions.

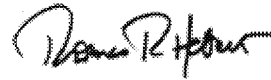
7. Given that there are no nationally recognized or widely accepted air emissions estimation methodologies that livestock and poultry farmers or regulatory authorities can use, farmers will be forced to rely on research or monitoring data from farms that do not have the same operating setup as their own systems, are not located in the same geographical locations, or do not have the same climates and operating conditions. Farmers will either have to use these estimates or extrapolate from those estimates to develop estimates for their own operations. In either case, they will have to do this knowing that the estimates are

probably wrong. As a result, they will be fearful about exposing themselves to significant new liabilities for errors arising through no fault of their own.

8. These fears will be profoundly magnified by the complexity and scope of the written reporting requirements such as those set forth in EPA's regulations. Just to name a few items, farmers will be required to provide information on the identity and location of "sensitive" populations and ecosystems within a one-mile radius of their farms; and the frequency of the release and fraction of the release from each release source and the specific period over which it occurs. In addition, many of the most critical terms currently used in the current regulations are totally unfamiliar to farmers, and will cause confusion. For instance, how will farmers know whether, under CERCLA, the ammonia that is released into the air from manure on their farms constitute "continuous and stable" emissions when those farmers do not have a uniform, reliable method to estimate these emissions? And, assuming their emissions are "continuous and stable," how will farmers know whether there is a "statistically significant increase" in emissions without a uniform, reliable method to estimate them? No guidance on these and a host of other questions relevant to CERCLA/EPCRA emergency release reporting by farming operations has ever been issued by EPA. Nearly every livestock and poultry producer that I have spoken with on this subject of reporting under CERCLA over the last three months has had these and other questions.

I declare under penalty of perjury that the foregoing is true and correct.

Executed this 26th day of July, 2017, in Washington, DC.



Thomas R. Hebert

CERTIFICATE OF SERVICE

I hereby certify that on July 27, 2017, I caused copies of the foregoing Declaration of Thomas R. Hebert to be served by the Court's CM/ECF system, which will send a notice of the filing to all registered CM/ECF users.

/s/ David Y. Chung

David Y. Chung

**IN THE UNITED STATES DISTRICT COURT
FOR THE WESTERN DISTRICT OF WISCONSIN**

**NATIONAL PORK PRODUCERS
COUNCIL,**

WISCONSIN PORK ASSOCIATION,

and

**DAIRY BUSINESS ASSOCIATION OF
WISCONSIN,**

Plaintiffs,

v.

LISA P. JACKSON

**Administrator, United States
Environmental Protection Agency,**

Defendant.

Civil Action No. 3:09-cv-00073-slc

**DECLARATION OF LAURIE FISCHER
IN SUPPORT OF PLAINTIFFS' MOTION FOR SUMMARY JUDGMENT**

I, Laurie Fischer, declare as follows:

1. I am the Executive Director of the Dairy Business Association of Wisconsin, Inc., ("DBA") located in Outagamie County, Wisconsin. I make this declaration based upon my personal knowledge and in support of the Motion for Summary Judgment of the National Pork Producers Council, Wisconsin Pork Association and Dairy Business Association, Inc.

2. DBA is a non-profit trade association representing milk producers, processors, dairy professionals, and associated vendors. DBA's charge, embodied in its mission statement

“Keeping the Cows in Wisconsin,” is to grow the state’s dairy industry and dairy processing infrastructure and preserve Wisconsin as “America’s Dairyland.”

3. DBA’s members include at least 100 farms in Wisconsin that would qualify as “large CAFOs” because they house more than 700 mature dairy cows or 1000 cattle other than mature dairy cows. DBA’s members include dairy farms in the Western District of Wisconsin.

4. I am personally aware of the nature of the operations of most of DBA’s 677 farm members, as well as the operations of other dairy farms in Wisconsin and elsewhere. Chemicals on these farms, such as pesticides, commercial fertilizer, substances used for cleaning, and manure (including manure, other animal excrement, and bedding or other materials that become intermingled with manure), are commonly used in farm operations. The farms that I know of use chemicals or other substances only in their ordinary farm operations. They do not use chemicals for other purposes.

5. The manure produced at dairy farms is used principally as a fertilizer and soil enhancer on fields where farm crops are grown, either by the dairy farm itself or by other nearby farms. Manure is widely recognized as an excellent source of plant nutrients and as a soil enhancer that provides positive benefits to soil quality. Manure contains many of the elements required for plant growth (including nitrogen) and therefore is a good source of nutrients. Manure is routinely used on farms, including dairy farms, as a valuable resource that reduces the amount of commercial fertilizer that would otherwise be applied to agricultural land.

6. It is my understanding that ammonia, hydrogen sulfide, and other chemical substances are emitted from animal manure.

7. I have been informed by some DBA members that they have attempted to report their routine air emissions to local and state authorities in response to the U.S. Environmental

Protection Agency's December 18, 2008 Federal Register notice. These farmers indicate that the local and state authorities have expressed confusion as to why farmers were calling to report routine farm air emissions and what they were supposed to do with the information provided. Some agency staff have asked farmers for information regarding the EPCRA reporting requirements.

8. I have been informed by DBA members that the chemicals substances, including manure, on their farms are used only for ordinary farming purposes but that they have made emergency reports under EPCRA for fear that they may be subject to large fines or criminal penalties if they do not make these reports.

I declare under penalty of perjury under the laws of the United States of America that the foregoing is true and correct.

Executed this 20th day of March, 2009.

s / Laurie Fischer
Laurie Fischer

CERTIFICATE OF SERVICE

I hereby certify that on July 27, 2017, I caused copies of the foregoing Declaration of Laurie Fischer to be served by the Court's CM/ECF system, which will send a notice of the filing to all registered CM/ECF users.

/s/ David Y. Chung

David Y. Chung

UNITED STATES DISTRICT COURT
WESTERN DISTRICT OF WISCONSIN

NATIONAL PORK PRODUCERS
COUNCIL,

and

WISCONSIN PORK ASSOCIATION,
Plaintiffs,

and

DAIRY BUSINESS ASSOCIATION,
INC.

Case No: 3:09-cv-00073-slc

Intervening Plaintiff,

v.

LISA P. JACKSON
Administrator
United States Environmental Protection
Agency,

Defendant.

**DECLARATION OF CHAD BIERMAN IN SUPPORT OF PLAINTIFFS'
MOTION FOR SUMMARY JUDGMENT**

I, CHAD BIERMAN declare as follows:

1. My name is Chad Bierman and I reside in La Crosse County, Wisconsin. I make this declaration based upon my personal knowledge.
2. I am a member of the Wisconsin Pork Association and voluntarily contribute "check off" funds to the National Pork Producers Council. I understand that the information that I am providing in this declaration will be used to determine whether my farm and similar farms qualify for a statutory exemption to

emergency reporting requirements under the federal Emergency Planning and Community Right-to-Know Act (“EPCRA”). I have authorized the National Pork Producers Council and Wisconsin Pork Association to represent my interests for this purpose.

3. I have spent nearly all my life in and around animal agriculture. During my childhood, my family operated a pork farm. In college I studied agriculture. I have received a Bachelor of Science degree in animal science and a Master’s Degree in animal science and genetics, both from South Dakota State University. I am currently a Ph.D. candidate in the animal science department at the University of Wisconsin—Madison campus.

4. I am the General Manager of the Babcock Genetics, Inc. (“Babcock”) pork farm located at N6671 County Hwy XX, Holmen, Wisconsin (the “Babcock Pork Farm”). The Babcock Pork Farm is located on one parcel of land that is devoted to the raising of swine for the production of pork.

5. The Babcock Pork Farm independently houses more than 2,500 swine that weigh 55 pounds or more. These swine are raised in environmentally controlled barns that have collection pits under the slatted floors.

6. A variety of chemical substances are used in the ordinary farming operations of the Babcock Pork Farm. These substances include pesticides, chemical fertilizers, cleaning agents, and manure (swine excrement, which may be mixed with dirt, bedding material, or other materials from the areas where the

animals are housed). I am aware of no chemicals at my farm other than those used in routine farm operations.

7. Manure produced at the Babcock Pork Farm is used for farm purposes, either as a fertilizer or soil enhancer on fields where crops are grown. Manure is widely recognized as a valuable resource because it is an excellent source of plant nutrients and a soil enhancer that provides positive benefits to soil quality. Manure contains many of the elements required for plant growth (including nitrogen, phosphorus and potassium) and therefore is a good source of nutrients.

8. It is my understanding that ammonia and hydrogen sulfide are substances that can be emitted from manure, including from the manure at the Babcock Pork Farm.

9. The Babcock Pork Farm utilizes a manure management system that involves the collection, storage, and land application of manure. Manure and other substances, such as feed and water, fall through perforations in the floor of the barns and into storage pits. Periodically, this manure is drained from the storage pits with the assistance of a scraping device and into a lift station. From the lift station, the manure is pumped into a two-phase purifying lagoon system. The manure is pumped into the first lagoon, which breaks down coarse solids. From this first lagoon, water flows into a second lagoon for further purifying. Both of these lagoons have clay and synthetic liners on top of the clay liner. The

manure is converted to liquid form and to date we have not had to remove solids from either lagoon.

10. Liquid from the second lagoon is pumped through an underground piping system to a pivot irrigation device. This pivot irrigation device spreads the liquid nutrients onto agricultural fields on which crops are grown. During the crop season, the pivot irrigation system has the potential to operate virtually every day.

11. Babcock owns or leases all of the 600 acres of agricultural fields upon which manure is applied to fertilize crops. The crops grown on these fields include corn, soybeans and alfalfa.

12. The Wisconsin Department of Natural Resources (“WDNR”) has issued a Wisconsin Pollution Discharge Elimination System (“WPDES”) permit (No. WI-005-6529-04-0) authorizing and regulating the manure management activities associated with the agricultural operations on the Babcock Pork Farm. Among other things, this WPDES permit requires that all landspreading of manure comply with a “Nutrient Management Plan” that is approved by the WDNR.

13. I cannot conclusively or reliably determine the amount of ammonia, hydrogen sulfide, or other substances being emitted from the manure on the Babcock Pork Farm. Universities and others have developed preliminary techniques for estimating these rates. However, I understand that these estimates vary substantially from technique to technique and also from study to study.

14. I have used an emission estimator prepared by the University of Nebraska that purports to roughly estimate the amount of ammonia emissions that

might be associated with the manure at the Babcock Pork Farm. Depending upon the assumptions that are made, this estimator suggests that there could be between 165 and 335 lbs/day of ammonia emissions attributable to the manure at the Babcock Pork Farm.

15. On January 20, 2009, I telephoned the designated contacts for the La Crosse County Emergency Planning Committee and Wisconsin Emergency Management to report the ammonia emission estimates associated with the Babcock Pork Farm as derived using the University of Nebraska emissions estimator. During my conversation with the Wisconsin Emergency Response contact, I was told that its staff was unaware that farms were required to report emissions-related information until that day (*i.e.*, January 20, 2009) and that staff were not prepared for the calls.

I declare under penalty of perjury that the foregoing is true and correct.

Executed on this 20th day of March, 2009.

s / Chad Bierman

Chad Bierman

CERTIFICATE OF SERVICE

I hereby certify that on July 27, 2017, I caused copies of the foregoing Declaration of Chad Bierman to be served by the Court's CM/ECF system, which will send a notice of the filing to all registered CM/ECF users.

/s/ David Y. Chung

David Y. Chung

ARGUED DECEMBER 12, 2016
DECIDED APRIL 11, 2017

Nos. 09-1017(L), 09-1104

**IN THE UNITED STATES COURT OF APPEALS
FOR THE DISTRICT OF COLUMBIA CIRCUIT**

WATERKEEPER ALLIANCE, ET AL.

Petitioners,

v.

U.S. ENVIRONMENTAL PROTECTION AGENCY,

Respondent.

PETITIONS FOR REVIEW OF FINAL ACTION
OF THE ENVIRONMENTAL PROTECTION AGENCY

DECLARATION OF MICHAEL C. FORMICA

I, Michael C. Formica, hereby declare:

1. I am currently employed by the National Pork Producers Council (NPPC), a trade association representing the nation's hog farms, in its Washington, D.C. public policy office, where I serve as the Assistant Vice President & Legal Counsel, Domestic Affairs. This declaration is made based upon my personal knowledge and is offered in support of a request that this Court stay its mandate for a period of six months.

2. I have been an employee of NPPC since August 2006. During the course of my employment, though my duties have grown, I have been the primary individual responsible for dealing with environmental compliance issues on behalf of the organization. I also manage NPPC's Environmental Policy Committee. This work has given me extensive experience working directly with pork producers and other livestock farmers regarding their compliance with federal environmental laws and regulations generally, and specifically with regard to air emissions reporting rules.

3. In this declaration I will focus on my experience with the CERCLA and EPCRA reporting rules.

4. The struggle to estimate emissions from pork farms is not academic, or limited to the smallest farms. Just this week I have had conversations with leading pork producing companies—sophisticated operations—that are struggling with the details of what they are required to report, the process they need to use to calculate their estimated emissions, and the accuracy of the various techniques as applied to particular farms.

5. Most pork farms are smaller farms not previously subject to the reporting rules. In the rural areas where these farmers reside, just as there is a consistent lack of medical professionals, there is a lack of legal assistance. And the legal professionals that do provide services in rural areas tend to be generalists,

focusing on contracts, estate planning, and real estate, not specialists in federal environmental law. As a result, these farmers will have difficulty understanding the reporting requirements, and will seek guidance from EPA and the USDA.

6. I experienced this problem firsthand in 2009 when the reporting rules first took effect. Mass confusion resulted from the lack of guidance at that time, much of it caused by regulatory officials who were unaware that the reports were coming in or what they were for.

7. When the 2008 rule was issued, EPA failed to provide any guidance as to how agricultural operations should calculate, or even estimate, their emissions. Similarly, EPA provided no guidance, or even notice, to the state or local authorities receiving these reports as to what they would receive and why.

8. The result was chaos. Producers experienced multitudes of problems filing the reports. Many of the state and local emergency response coordinators at the time used fax machines. Typically, after the first 20 or so reports arrived, the fax machines ran out of paper and rejected the hundreds of reports that followed. In other offices, the voicemail systems were overwhelmed. We also heard reports that some offices that were open simply took the phone off the hook because so many reports were coming in.

9. In some states, instead of a lack of information, there was a significant amount of disinformation. For instance, producers in the state of Illinois were told

by state officials that there was no reporting requirement and that the rule was simply an internet hoax. Officials from EPA Region 4 were reported to have told state and county officials in North Carolina that they did not need to accept the reports and instead to direct any farmers to the EPA Office of Water.

10. Most shockingly for me personally was that when I returned home after attending the Presidential Inauguration (under EPA's 2008 Rule, EPCRA reports were due to be filed on January 20, 2009) I had phone messages from local officials from around the country who were trying to figure out why these reports were filed. They had found my home telephone number after hearing from pork producers trying to make the reports that I had information on the regulatory program that was prompting these reports.

11. If the Court's mandate were to issue immediately, we could expect something similar to occur today—but on a larger scale, because the universe of farms subject to the rule would be significantly greater. We conservatively estimate that there are somewhere between 60,000 and 100,000 livestock farms nationwide that might potentially be subject to a reporting requirement.

12. I had staff at NPPC examine the reporting rate at the National Response Center. As of July 26, 2017, there have been a total of 13,478 reported releases in 2017 to the National Response Center based upon its annual table of

reports received published at <http://nrc.uscg.mil/>. That averages out to a daily rate of 65.11 reports a day received by the NRC.

13. Going back to 1990, the average daily rate for reports to the National Response Center is 89.52, with the total volume of reports received in any one year ranging from a high of 33,665 in 1994 to the 24,193 reports received last year (in 2016). However, when this Court's decision takes effect, the National Response Center will likely receive significantly more reports over a few days than it has ever received in a full year over the 27 years of its existence.

Executed this 27th day of July, 2017, in Washington, D. C.



Michael C. Formica

CERTIFICATE OF SERVICE

I hereby certify that on July 27, 2017, I caused copies of the foregoing Declaration of Michael C. Formica to be served by the Court's CM/ECF system, which will send a notice of the filing to all registered CM/ECF users.

/s/ David Y. Chung

David Y. Chung